



FRIDAY, JULY 28.

## Train Accidents in June.

The following accidents are included in our record for the month of June:

## REAR COLLISIONS.

On the morning of the 3d a freight train on the Norfolk & Western road broke in two near Battersea, Va., and the rear section ran into the forward one, wrecking several cars and injuring a brakeman.

On the morning of the 5th the engine and caboose of a repair train on the Chicago, Milwaukee & St. Paul road ran into the rest of the train, which had been left standing on the track near Muscoda, Wis. The caboose was wrecked, a laborer fatally hurt and four others less severely injured.

About noon on the 7th the engine of an ore train on the Chicago & Northwestern road suddenly started off without apparent cause and ran into the rear of another ore train in the yard in Florence, Mich. The engine and several cars were damaged.

On the morning of the 11th a freight train on the New York, Pennsylvania & Ohio road ran into a preceding freight near Randolph, N. Y., wrecking three cars, and injuring the fireman. The wreck was at a curve on a high bank, making it very difficult to handle, and the road was blocked 12 hours.

On the afternoon of the 12th a repair train on the Flint & Pere Marquette road ran into the rear of a freight train near Midland, Mich., wrecking the engine and several cars.

On the morning of the 14th an ore train on the Chicago & Northwestern road broke in two in Negaunee, Mich., and the detached cars ran back down grade and into an engine standing on the track. The engine and several cars were wrecked.

On the morning of the 17th a passenger train on the Western & Atlantic road ran over a misplaced switch and into a freight train standing on a siding at Kingston, Ga. The engine and several cars were wrecked, the engineer killed and the fireman fatally hurt.

On the night of the 17th a freight train on the Chicago, Burlington & Quincy road ran into some freight cars which had been blown from a siding out upon the main track at Mt. Pleasant, Ia., by a tornado, and several cars were wrecked. The engineer was hurt.

On the night of the 17th a passenger train on the Northern Central road ran into a caboose which had broken loose from a preceding freight train near Whitehall, Md. The caboose was wrecked, the fireman and a man who was riding in the caboose were hurt.

On the morning of the 19th a passenger train on the New York Central & Hudson River road ran into some cars which had broken loose from a preceding freight train near Spencerport, N. Y. The engine and several cars were damaged, a fireman and two passengers hurt. The freight had sent back no signal.

On the morning of the 19th a passenger train on the Virginia Midland road ran over a misplaced switch and into some coal cars standing on a siding at Fall Creek, Va. The engine and several cars were damaged, the engineer and two other trainmen hurt.

On the afternoon of the 22d a passenger train on the Great Western Railway ran over a misplaced switch and into some freight cars on a siding near Hamilton, Ont. The engine and two cars were badly broken, the engineer killed, the fireman and a sleeping-car conductor badly hurt.

On the night of the 23d a freight train on the New York Central & Hudson River road ran into the rear of a preceding freight which had stopped for water at Palmyra, N. Y., wrecking several cars. A signal had been sent back, but the second train did not stop.

On the morning of the 25th a freight train on the New York, Lake Erie & Western road broke in two near Oxford, N. Y., and the rear section ran into the forward one, damaging three cars.

On the afternoon of the 26th a passenger train on the Long Island road ran into the rear of a preceding passenger train, which had been stopped near Fresh Pond, N. Y., by the derailing of the locomotive. A car was badly broken. It is charged that the first train sent out no flag.

On the night of the 26th a freight train on the Rock Island & Peoria road ran into some cars which had broken loose from a preceding freight near Galva, Ill., wrecking several cars.

On the morning of the 28th a passenger train on the East Tennessee, Virginia & Georgia road ran over a misplaced switch and into a freight train standing on a siding in Cleveland, Tenn. The engine and several cars were badly damaged.

On the night of the 29th a freight train on the Hannibal & St. Joseph road ran into the rear of a preceding freight near Laclede, Mo., wrecking the engine and several cars, killing a brakeman and injuring the engineer and fireman.

## BUTTING COLLISIONS.

On the night of the 2d there was a butting collision between two freight trains on the Chicago, St. Paul, Minneapolis & Omaha road near Warren, Wis. Both engines and 10 cars were badly broken. On one of the trains was a gang of lumbermen, one of whom was killed and four others hurt. The west-bound train had an order to meet the other at Warren, but did not stop.

On the 14th there was a butting collision between two freight trains on the Canadian Pacific road at Ossawa, Man., by which both engines were badly damaged.

On the morning of the 21st there was a butting collision between a freight and a coal train on the Syracuse, Geneva & Corning road in Geneva, N. Y., by which both engines were slightly damaged.

On the afternoon of the 21st there was a butting collision between a special passenger train and a ballast train on the Lehigh Valley road near Mt. Carmel, Pa. Both engines were badly broken and three trainmen hurt.

On the evening of the 26th there was a butting collision between a passenger and a freight train on the Missouri, Kansas & Texas road near Whitesboro, Tex. Both engines and several cars were damaged, and 5 trainmen hurt.

## CROSSING COLLISION.

On the afternoon of the 24th the engine of a coal train on the Central Railroad of New Jersey, ran into the engine of a Pennsylvania Railroad freight train at the crossing of the two roads in Elizabeth, N. J. The Pennsylvania engine was badly damaged and the crossing blocked two hours.

## DERAILMENTS, BROKEN RAIL.

On the morning of the 1st a passenger train on the Chicago, Burlington & Quincy road struck a broken rail near Fredricksville, Ill., and three cars were thrown from the

track and upset, injuring 30 passengers, most of them slightly.

On the morning of the 2d a passenger train on the Florida Transit road struck a broken rail near Baldwin, Fla., and two cars were thrown from the track.

On the morning of the 24th a passenger train on the Cincinnati Southern road was thrown from the track near Georgetown, Ky., by a broken rail. The engine and several cars were badly broken, the engineer killed, the fireman, baggageman and two passengers hurt.

## DERAILMENTS, BROKEN BRIDGE.

On the morning of the 27th a Howe-truss bridge of 150 ft. span, on the Oregon & California road, near Aurora, Or., gave way under a freight train and nine cars, were down into Fudding River and were wrecked. A brakeman was hurt. The bridge was built 12 years ago, and thoroughly repaired and partly renewed four years ago. It was recently examined and pronounced in good condition.

About noon on the 28th a bridge near New Cambria, Mo., the abutments of which had been washed out by a freshet, gave way under a freight train on the Hannibal & St. Joseph road, and the engine and several cars went down. The engineer was fatally injured and the fireman less severely hurt.

## DERAILMENTS, SPREADING OF RAILS.

On the night of the 2d a coal train on the Baltimore & Ohio road was thrown from the track near Dickson, O., by the spreading of the rails.

On the night of the 6th the engine and several cars of a freight train on the Missouri Pacific road were thrown from the track near Warrensburg, Mo., by the spreading of the rails.

On the morning of the 14th two cars of a passenger train on the Oregon & California road were thrown from the track in Hubbard, Or., by the spreading of the rails.

On the morning of the 16th a car of a passenger train on the Clarksburg, Weston & Glenville road was thrown from the track on a trestle, near Waldon, West Va., and fell to the ground, turning over in its fall. The car was wrecked, killing three passengers, injuring the conductor and 10 others. The accident was caused by the spreading of the rails.

On the morning of the 29th a New Jersey Central passenger train running over the New York & Long Branch road ran off the track on the pile bridge over a broad, shallow arm of the Shrewsbury River at Little Silver, N. J. The engine, baggage car and drawing-room car ran across the bridge on the ties, but the smoking car and four following passenger cars went off the bridge and fell upon the muddy bottom of the river in water about four feet deep. The cars were badly wrecked, one passenger was killed at once, five others so hurt that they have since died, and 47 less severely injured. The evidence taken at the coroner's inquest indicated that the accident was caused by the spreading of the rails at a point at the head of the bridge, where the trackmen had been putting in a switch the day before and had left the rails only half spiked, expecting to finish their work next day. The bridge had no guard rails. The verdict of the jury was that the deceased "came to their death from the accident, which was caused by spreading of rails on the Parker's Creek bridge; and that the New York & Long Branch Railroad Company is guilty of gross and culpable negligence." The road, which was formerly worked by the New Jersey Central, is now under a separate management, both the Pennsylvania and the New Jersey Central running trains over it. A Pennsylvania express train had passed over the bridge only a few minutes before, and it is possible that it had so loosened the insecurely fastened rail that it was ready to give way when the next train struck it. The wrecked train had a large number of passengers on board; it was an express, stopping only once between Long Branch and Jersey City, and was a favorite train with New York business men who came in each morning. Many well-known men were on board, including Gen. Grant, who was taken out unhurt and assisted in directing the removal of the injured; Mr. George R. Blanchard of the Erie, and W. R. Garrison, President of the Metropolitan Elevated, who was fatally hurt.

## DERAILMENTS, BROKEN AXLE.

On the night of the 1st the engine of a passenger train on the Texas & Pacific road broke an axle when on a trestle bridge, near Colorado City, Tex., and the engine and baggage car fell from the bridge injuring three trainmen badly.

On the afternoon of the 25th several cars of a freight train on the New York Central & Hudson River road were thrown from the track in New York by a broken axle.

## DERAILMENTS, BROKEN WHEEL.

On the night of the 14th fifteen cars of a freight train on the Portland & Rochester road were thrown from the track near Springvale, Me., by a broken wheel, and went down a high bank, piling up in a bad wreck 60 feet from the track.

On the morning of the 24th a car of a passenger train on the New York, New Haven & Hartford road was thrown from the track, near Fleetwood, N. Y., by a broken wheel.

On the evening of the 24th a construction train on the St. Paul, Minneapolis & Manitoba road ran off the track, near Atwater, Minn., and the engine and 22 cars went down a bank into the water. The caboose was crowded with laborers, and 10 men were killed and 30 wounded. The accident is believed to have been caused by a broken wheel.

## DERAILMENTS, WASH-OUT.

Near midnight on the 10th a passenger train on the Chicago, Milwaukee & St. Paul ran into a wash-out, near Canton, Dak., and three cars went into the gap, injuring five persons.

On the 15th a freight train on the Wabash, St. Louis & Pacific road ran into a long wash-out near Gibson, Ill., and two engines went into the Sangamon River. A trainman was killed and three others hurt.

On the night of the 23d a freight train on the Chicago, Milwaukee & St. Paul road ran into a wash-out near Owatonna, Minn., the engine and three cars being piled up in the gap in a bad wreck. The engineer was killed and the fireman badly hurt.

## DERAILMENTS, WIND.

On the night of the 17th a freight train on the Chicago, Rock Island & Pacific road was blown from the track by a tornado near Grinnell, Ia., and badly wrecked. The conductor and a tramp were killed and a brakeman badly hurt.

On the night of the 17th a freight train on the Central Iowa road was blown from the track and wrecked by a tornado, near Grinnell, Ia. Two trainmen were hurt.

On the night of the 23d 18 cars of a freight train on the Chicago, St. Paul, Minneapolis & Omaha road were blown from the track and upset by a tornado near Le Mars, Ia.

On the morning of the 24th a freight train on the Illinois Central road was blown from the track near Ft. Dodge, Ia., by a tornado.

About the same time a freight train on the Chicago & Northwestern road was blown from the track near Emmetsburg, Ia., by the same tornado.

## DERAILMENTS, CATTLE.

On the night of the 10th a passenger train on the Balti-

more & Ohio road ran over a cow near Martinsburg, W. Va., and the engine and four cars were thrown from the track and badly broken, injuring five passengers.

On the afternoon of the 13th a passenger train on the Illinois Central road ran over a horse near Ft. Dodge, Ia., and the engine and three cars were thrown from the track.

On the evening of the 18th a passenger train on the Chicago, Burlington & Quincy road ran over a cow near Albia, Ia., and several cars were thrown from the track.

## DERAILMENT, MISPLACED SWITCH.

Very early on the morning of the 20th a car of a passenger train on the Manhattan Elevated road was thrown from the track at the Chatham Square station in New York, by a misplaced switch.

## DERAILMENT, OPEN DRAW.

On the morning of the 1st the engine of a passenger train on the New York Central & Hudson River road went through the open draw of a bridge at Cayuga, N. Y., and fell into the canal on its side. The engineer and fireman were slightly hurt. It is claimed that the usual signals were displayed.

## MALICIOUS DERAILMENT.

On the morning of the 13th a passenger train on the Ohio & Mississippi road was thrown from the track near Seymour, Ind., where a rail had been removed from the track by persons unknown. A trainman was hurt, and a tramp, who was stealing a ride, was killed.

## UNEXPLAINED DERAILMENTS.

On the night of the 2d a freight train on the St. Louis, Iron Mountain & Southern road ran off the track near O'Keefe, Ark. The engineer and fireman were hurt.

On the night of the 4th some cars of a freight train on the Louisville & Nashville road ran off the track near Montgomery, Ala., blocking the road six hours.

On the morning of the 8th an engine of a passenger train on the Coney Island Elevated road suddenly started off from West Brighton, N. Y., and, after running a short distance, jumped the track and fell to the ground.

On the evening of the 9th several cars of a freight train on the Rutland road ran off the track in Burlington, Vt., and were wrecked. The conductor was hurt.

On the afternoon of the 10th, 15 cars of a freight train on the Allegheny Valley road were thrown from the track near Red Bank, Pa., and some of them were badly wrecked.

On the morning of the 11th a freight train on the Louisville & Nashville road ran off the track near Birmingham, Ala., and 12 cars were wrecked, blocking the road eight hours.

On the afternoon of the 12th three cars of a freight train on the Louisville & Nashville road were thrown from the track at Elkmont, Tenn., blocking the road several hours.

About noon on the 15th the rear car of a passenger train on the Louisville, New Albany & Chicago road jumped the track near Bedford, Ind., and went down a high bank, pulling the whole train after it and piling all up in a bad wreck. The engineer was killed and 11 passengers badly hurt, nearly all the rest being bruised slightly.

On the morning of the 16th a passenger train on the New York Central & Hudson River road ran off the track near Brockport, N. Y., and the engine upset and was badly broken. The engineer was killed and the fireman very badly hurt. The track was blocked six hours.

On the evening of the 19th the engine and several cars of a freight train on the Detroit, Mackinac & Marquette road ran off the track near Chocoma, Mich. A brakeman was slightly hurt.

On the morning of the 20th the engine of a freight train on the South Pacific Coast road ran off the track near Glenwood, Cal., and the engine upset and was wrecked. The fireman was fatally hurt.

On the evening of the 20th the engine and several cars of a passenger train on the Manhattan Beach road ran off the track at Manhattan Beach, N. Y., blocking the road two hours.

On the night of the 21st several cars of a freight train on the Pittsburgh, Ft. Wayne & Chicago road ran off the track in Pittsburgh, Pa., and knocked down a building adjoining the track.

On the night of the 23d the rear car of a passenger train on the New York Central & Hudson River road jumped the track near Tonawanda, N. Y., and upset.

On the afternoon of the 26th the engine of a passenger train on the Long Island road ran off the track near Fresh Pond, N. Y., and was badly broken.

On the morning of the 27th a freight train on the Boston, Concord & Montreal road ran off the track near Littleton, N. H., and the engine and six cars were piled up in a bad wreck, blocking the track all day.

On the morning of the 28th a helping engine on the New York, Lake Erie & Western road ran off the track near Port Jervis, blocking the road an hour.

## OTHER ACCIDENTS.

On the morning of the 21st the engine of a passenger train on the New York, Lake Erie & Western road broke a parallel rod when near Otisville, N. Y., and the loose-ends tore up one side of the cab and damaged the engine badly. The engineer was hurt while trying to stop the train.

On the morning of the 25th a large rock fell from the side of a cut upon the engine of a passenger train on the Denver & Rio Grande road, near Subleta, N. M. The engine was badly damaged, but not thrown from the track.

This is a total of 72 accidents, in which 35 persons were killed and 193 injured. Twenty-three of the killed and 76 of the injured were railroad employees, leaving 12 of the killed and 117 of the injured passengers or other persons riding on the trains.

As compared with June, 1881, there was a decrease of one accident, but an increase of four in the number killed and of 115 in that of injured.

For the six months of 1882 there have been reported 571 accidents, 170 killed and 708 injured, making a monthly average of 95 accidents, 28 killed and 118 injured.

The month of June was below the average in accidents, but far above it in the number of killed and injured. There was an unusually large number of casualties during the month, caused by several bad accidents.

## Transportation in Congress.

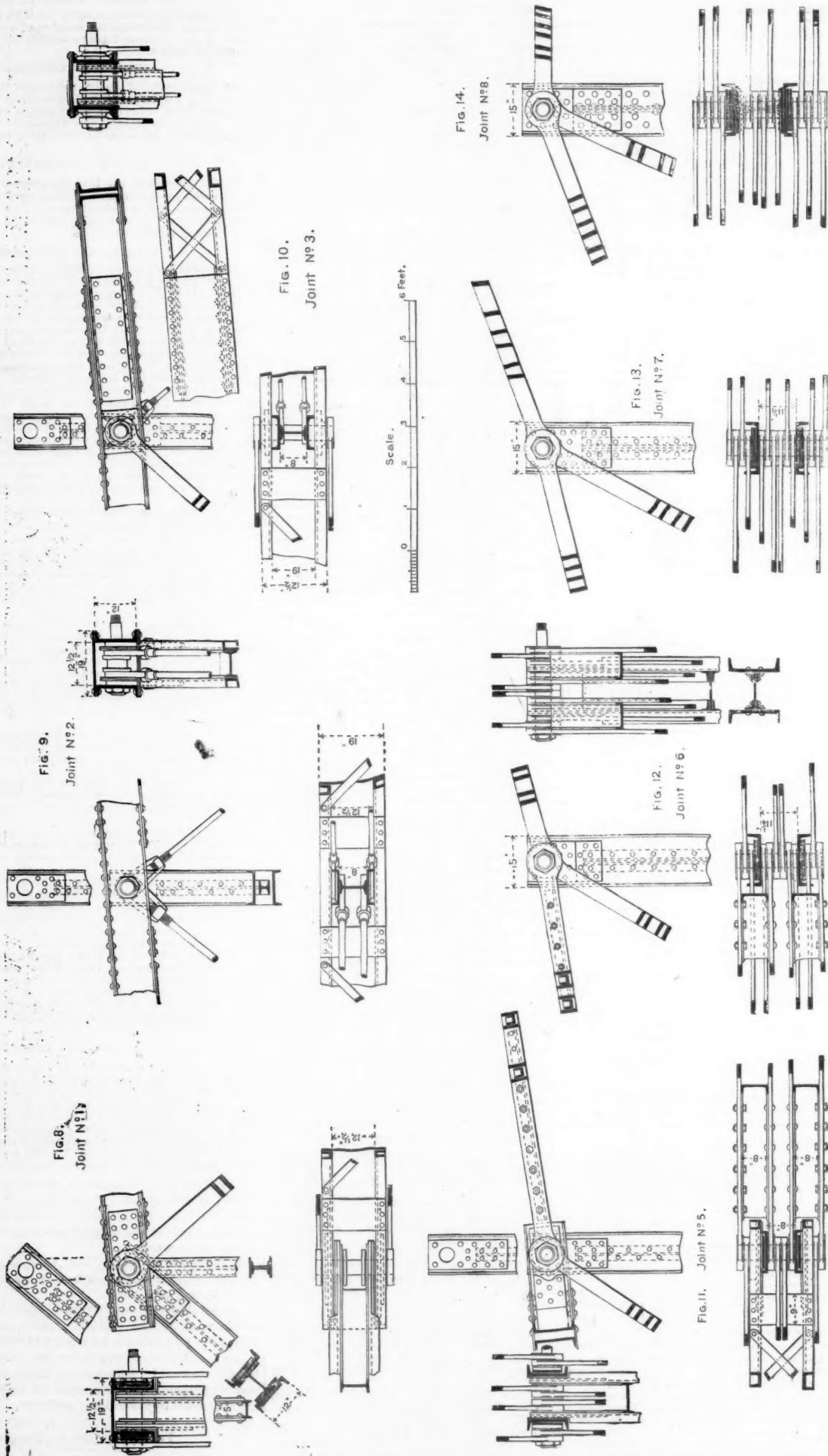
In the Senate on the 20th:

A joint resolution to authorize the building of a bridge over the St. Lawrence River was reported and passed.

Mr. Grover, from the Military Committee, reported with amendment the Senate bill granting a right of way to the San Francisco & Ocean Shore Railroad Co. Put on the calendar.

In the House on the 21st:

On motion of Mr. Upson (Texas), the Senate bill was



DETAILS OF THE TOP CHORD OF DRAW-SPAN OF THE HARLEM RIVER BRIDGE, [WEST-SIDE & YONKERS RAILWAY,] AT EIGHTH AVENUE, NEW YORK.

Alfred P. Boller, Chief Engineer; Clarke, Reeves & Co., and Smith, Ripley & Co., Contractors.



passed authorizing the construction of a steel railway bridge over the Rio Grande between El Paso and Paso Del Norte.

In the Senate on the 25th: Mr. McMillan presented and explained the conference report on the River and Harbor bill. The following are the changes made by the conference:

The appropriations for surveys of the Delaware & Chesapeake Canal and the Hennepin Canal are reduced from \$20,000 to \$10,000, and from \$100,000 to \$80,000 respectively, and a proviso is added in each instance that the government shall not thereby be committed in favor of proceeding to the construction of the improvement. The amount voted for the Potomac flats improvement is reduced from \$500,000 to \$400,000, and the appropriation for the Mississippi River below Cairo, from \$5,000,000 to \$4,123,000, which is the amount fixed by the House.

#### The Harlem River Bridge, West Side & Yonkers Railway.

We continue this week the illustration of the details of construction of the Harlem River Bridge. Figs. 8 to 14 are detailed views of the different joint connections of the upper chord, which are numbered in Fig. 4, published last week, and indicated by corresponding numbers in the detailed views published this week. Figs. 15 to 19 are detailed views of the joint connections of the lower chord.

tions of the cities of New York, Philadelphia, Baltimore and Boston, and to such like organizations in the interior as it was thought would be inclined to respond, inviting them to appear before the Commission and present their views; and whenever a desire to be heard was expressed by any one of them, time and place were designated for the purpose.

From the Produce Exchange, the Board of Trade and Transportation, and the Chamber of Commerce of the City of New York, and from the corresponding organizations of the cities of Philadelphia and Baltimore, letters expressive of a desire to be heard were received, and public meetings were accordingly held in those cities, at which the question referred to us was very fully considered and discussed. For the purposes of such discussion, we found that in every instance careful and thoughtful preparation had been made, and the arguments, either in full or in substance, were put in print for our subsequent review. Statistics were also collected for us, so far as was thought important. Under the guidance of the commercial bodies, we also visited and inspected the railroad terminal facilities, under circumstances most favorable to a full understanding of the manner in which they concerned the general subject.

The leading commercial organizations of St. Louis, Louisville and Toledo also appeared before us at public sittings held in those cities respectively, and presented their views in print, supplementing them with oral arguments and explanations.

We were also favored at Philadelphia with discussions by

three cents per 100 lbs. less. On westward bound freights the differences are not uniform, but are made higher in the case of those classes of property which are rated highest in the freight tariffs. As between the seaboard cities and St. Louis, Cincinnati, Toledo and other Western towns, the rates are proportioned to the Chicago rate according to mileage. This is the existing rule or practice.

Whether it is right or proper to make any such discrimination in the charges for the transportation of property between the Atlantic cities and the cities of the interior, and if so, to what extent, is the question that we understand was referred to us, and nothing more. We, therefore, limit our discussion to that question, and pass by many subjects of interest in railroad transportation that were more or less touched upon in the public discussions which took place in our hearing, but which can interest us as only as private citizens. Whatever opinions we or any of us may have respecting controverted questions in railroad policy and railroad management, which do not fall within the scope of our present inquiry, it would not become us to intrude them into this discussion.

#### THE PARTIES CONCERNED.

Although the invitation to us came from the trunk-line railroad companies, we have not understood that this was because the subject was one over which they had rightfully any exclusive authority. It is, indeed, a subject with which they, first of all, are called upon to deal, for they and their affiliated roads enforce the charges which come under con-

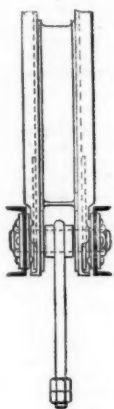


Fig. 15. Joint No. 0.

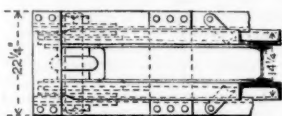


Fig. 16. Joint No. 1.

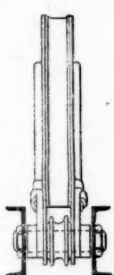


Fig. 17. Joint No. 2.

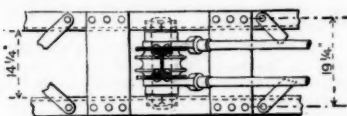


Fig. 18. Joint No. 7.

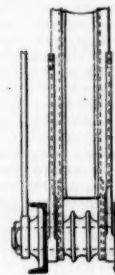
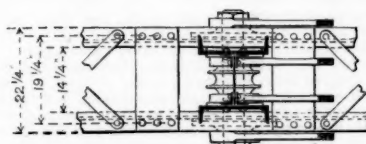


Fig. 19. Joint No. 8.



DETAILS OF LOWER CHORD OF THE HARLEM RIVER BRIDGE.

#### Report of the Advisory Commission upon Differential Rates.

##### PRELIMINARY.

In January, 1882, the undersigned were notified that they had been selected by the New York Central & Hudson River Railroad Company, W. H. Vanderbilt, President; the New York, Lake Erie & Western Railroad Company, H. J. Jewett, President; the Pennsylvania Railroad Company, G. B. Roberts, President, and the Baltimore & Ohio Railroad Company, John W. Garrett, President, to act as an Advisory Commission upon "the differences in rates that should exist, both eastwardly and westwardly, upon all classes of freights between the several terminal Atlantic ports," and to report upon the same.

Accepting the appointment, the undersigned met and organized as a Commission, at the City of New York on February 13, 1882, by designating Mr. Thurman to act as Chairman and selecting Mr. Thomas C. Moore, of Indianapolis, as Secretary. On conferring with Mr. Albert Fink, who on that occasion represented the several railroads named, we were informed that it was not the purpose or desire of the railroad managers to take part in the proposed inquiry after setting it on foot; but that they proposed to leave it exclusively in our hands, in the expectation, however, that other parties interested in the problems of railroad transportation would make before us a full showing of the facts which would have a bearing upon the question, and that we would then express our opinion, uninfluenced by the wishes or interests of the railroad companies. The managers informed us, however, that they held themselves ready to furnish any such information as might be peculiarly within their knowledge, at any time when we might call for it.

Having this understanding of our commission, and desirous of acting intelligently and with full information, we caused circulars to be sent to all the commercial organiza-

representatives of the Board of Trade of Newark, New Jersey, and at St. Louis with the views of the Board of Trade of Indianapolis, presented by one of its members. The Chamber of Commerce of Cincinnati communicated its views to us in formal resolutions, without deeming it necessary to request public sittings in that city, and single individuals, not representing any formal organizations, have also in some cases been heard. We have also sought and obtained information independently wherever we have found it available, and have made use of the published reports of the railroad companies for that purpose. Our endeavor has been to view the subject from the standpoints of the various interests concerned, and to reach a conclusion that overlooked the just claims of no interest and no locality.

##### THE QUESTION.

The subject referred to us is that commonly spoken of under the designation of "differential rates." In the reference, however, and in the paper which follows, the term is made use of in a somewhat restricted sense, being applied not to the differences in rates generally, or as between the several classes of freight as they are arranged in the tariffs of freight charges, but to the differences in rates which are made by the railroad companies as between the several Atlantic seaboard cities, and the interior points where the freights are taken up or delivered. It appears that the four railroad companies mentioned, and which, with the Grand Trunk of Canada, are commonly called the trunk-line roads, have generally been accustomed to make higher charges for the transportation of freights between New York and Boston, as eastern termini, and the leading towns of the interior, than between Philadelphia and Baltimore and the like towns; and that at the present time they seem to agree in the policy and propriety of making these differences. An idea of the extent of the differences is indicated by the statement that, taking the charges for the transportation of eastward bound freights from Chicago to New York as the standard, the charges to Boston are made the same, and those to Philadelphia two cents, and to Baltimore

consideration, and establish the differentials if any are established at all. But the railroads constitute a single class only of the many whose interests may be affected, and it may appear, perhaps, that they are not the class most largely concerned. In all the discussions before us it has been assumed that the people of Boston, New York, Philadelphia and Baltimore, and especially all those who are engaged in the exchange of commodities with the interior and with foreign countries, are largely interested, and that their prosperity is to some extent involved in the relative adjustment of rates. The railroads of the interior, which act as feeders to the trunk lines, and divide with them the charges on freights moved between the interior and the seaboard, are also interested to the extent that the differentials affect their proportion of the charges. We have found also that the people of the interior consider their interests to some extent involved in the question; and they certainly are concerned in having such tariffs of charges upon the roads over which their traffic is conducted as will give them the advantages of any and all the Atlantic markets, without subjecting their dealings with any one of them to unfair conditions or burdens. It is therefore evident that the question is one of very general interest; and it may almost be said that the question of relative equality of rates, as between Chicago and the Atlantic ports, when those between the other Western towns and the same ports are measured by them, is one of national rather than of local concern.

##### THE SITUATION.

Three distinct views of the differential rates were taken and urged before us, which may be shortly stated as follows: The New York view, that the differences made in the rates in favor of Baltimore and Philadelphia were wholly wrong and should be abrogated; the Baltimore view, that the differentials were right in principle, but if anything, too small; the Philadelphia view, that the differential should continue, but that they ought not to discriminate as between Philadelphia and Baltimore. In the interior we



encountered much difference in opinion, but no views distinctively peculiar.

The discussion was opened at New York, where it seemed to be assumed that the parties chiefly concerned were the three cities of New York, Philadelphia and Baltimore, and that the differentials operated to build up the business of the two last to the prejudice of that of New York. On this assumption it was then said they were unjust, and that it was the duty of the New York railroads to force their abrogation. It was also assumed that two of the trunk line railroads were peculiarly New York roads, whose managers ought to be expected to labor especially in the New York interest, and to enter into the rivalries of that city, so far, at least, as might be necessary to protect the commerce of New York against injury through the more favorable rates which might be offered by the Philadelphia and Baltimore roads to the people of those cities respectively. At Philadelphia a somewhat similar view was taken of the obligation of the Pennsylvania Railroad to protect Philadelphia interests, and at Baltimore a corresponding protection appeared to be looked for at the hands of the Baltimore & Ohio Railroad. Thus the several trunk-line railroads were spoken of as New York, Philadelphia and Baltimore roads respectively, and claims of a local nature were made upon them as being such roads.

Nothing, however, in our investigation of the subject has struck us more forcibly than the fact that the growth of railroad business has been such as to take from the several trunk-line roads nearly all of purely local character which they formerly possessed. The time appears to have gone by when the interests of any one of them can be concentrated upon and bound up indissolubly with the interests of any one city, so as to constitute it either the dependent or the champion of that city as against the rest of the Union, or even as against any other commercial centre of the Union. The arms of every one of these roads reach out in every direction to embrace and gather in the business of the country, and to distribute impartially according to need and demand. States and cities have called particular railroads into being, but they cannot circumscribe their operations, or make exclusive appropriation of their benefits. Once constructed, they belong to a public which pays little regard in business matters to state lines, and business reasons, which have general influence and force, control their operations, in spite of local sympathies or desires. It is true that two of the trunk-line railroads—the New York Central & Hudson River and the New York, Lake Erie & Western—hereinafter spoken of as the Central and the Erie respectively—find the largest share of what is called their through business directed to or originating at the city of New York, and it may be that their managers desire to bring to that city all the business they can control. In common parlance, there is certainly nothing misleading in speaking of these two as New York roads; for the major part of their interests centre in New York, and whatever benefits or injuries the business of New York, must, to some extent, benefit or injure them also. But these roads do not refuse freights to Baltimore, Philadelphia or Boston; on the contrary, they enter into competition for them, and through the assistance of affiliated roads, endeavor to make it for the interest of the people of those cities to avail themselves of their facilities in the transportation of goods and supplies. They thus make themselves part of a system of competitive roads, which offers to the business community of every Atlantic seaport a choice of traffic routes and traffic agencies, and they solicit business on the necessary understanding that they shall respect the just rights and claims of all localities, and not sacrifice to New York the interests which are confided to them elsewhere.

It is also not misleading to speak of the Baltimore & Ohio Railroad as a Baltimore road, for its interests, in the main, centre in the city of Baltimore; its bonds and stocks are supposed to be mainly held or controlled there, and its traffic is mainly between that city and the interior. But this road, no more than the New York roads, consents to stand apart from the railroad system of the country, as a road limiting its business to a single Atlantic terminus, and declining general competition. On the contrary, it solicits business at the seaports to the north of Baltimore; and that its efforts in that direction have a fair measure of success is evidenced by the fact that in the year 1880 it carried, of the westward bound freight moved by the trunk line roads from New York, more than 8 per cent., from Philadelphia more than 9 per cent., and from Boston about 5 per cent., and these proportions are fairly representative of the general run of its traffic. These facts are sufficient to show that neither the New York roads nor the Baltimore road are so exclusively linked to the business interests of those cities respectively as to be either unable or unwilling to share in or contribute to the prosperity of rival cities. And it is now publicly said, and seems to be understood, that the Baltimore & Ohio is seeking to obtain an independent line into New York, that it may make its competition at that point still more active and efficient.

It certainly cannot be claimed, with much appearance of plausibility, that the Pennsylvania Railroad is the road of any particular city. The company which owns it is indeed a Pennsylvania corporation, its offices are in the city of Philadelphia, its stocks and bonds are largely held there, and perhaps not largely held elsewhere in this country, and it is not improbable that the feelings and sympathies of those who manage its concerns would incline them to desire specially the growth and prosperity of Philadelphia above other places. But the road has its eastern terminus, not in Philadelphia, but on the harbor of New York, where it has made large and costly preparations to compete with the Central and the Erie for New York business. That it does compete with those roads successfully is shown by the enormous amount of freight which it moves from and carries into that city, and by the fact that the merchants of New York have come to look upon it, with entire justice, as one of their most important channels of communication with the west. In the year 1880 this road took out of New York 26 per cent. of the west-bound freight carried by the trunk roads, and delivered to it nearly 20 per cent. of the east-bound. While thus successfully bidding for the custom and favor of New York, it is plain that the Pennsylvania Railroad cannot antagonize the interests of New York unfairly, and must refrain from any attempt to subordinate them to the rival interests which it also endeavors to serve. It is a necessary condition of its competition for the trade of New York, that it shall make its services beneficial, and that it shall offer facilities which are not surpassed by those offered by other roads. But the Pennsylvania also, through its association with the Northern Central, competes with marked success for the trade of Baltimore, and took away from that city in the year 1880 23 per cent. of the west-bound freight carried by the American trunk line roads. Its share in the east bound freight was still more considerable, being 40 per cent. What is said of its relations to New York business may therefore with equal truth be said of its relations to the business of Baltimore: it must hold itself above the rivalries of locality, and assume the attitude of an impartial carrier, desirous of the favor and custom of the whole country, and willing and anxious to serve all localities on such terms as are relatively equal and substantially just.

It is not likely that this reaching out of all the trunk line roads to compete with each other in the several Atlantic

cities was contemplated when the roads were originally constructed; but as the several lines have pushed their connections in the West in competition, it has been found desirable for each to offer to its patrons the advantages of as many markets as possible, and to carry for them, without breaking bulk, whatever they have had for carriage in an eastward or westward direction. Competition has thus made roads national which were once local, and it is vain to expect that so important a subject as that of differential rates will be settled on the local preferences or prejudices of those who may have authority in railroad circles. It must, therefore, be settled either arbitrarily, by the fiat or agreement of the transportation companies or it must be determined by some underlying principle. We agree with what was said in the New York discussions and elsewhere, that any arbitrary adjustments in disregard of such principles as would naturally influence prices of transportation when untrammelled, would not, could not and ought not to be upheld. There should be—and as we think there must be—some principle by which to determine such a question, or perhaps two or more principles acting upon and qualifying each other.

It has been assumed in the discussions we have listened to, that business would be invited to a city by low rates upon its railroad lines, and that the prosperity of the city would bear some relation to these rates. How far this assumption is likely to be well founded, we, of course, have no more means of judging than has the general public. But the fact that each of the trunk-line roads has its relations to all the cities, and each city receives benefits from all the roads, is sufficient to suggest some question, whether low relative rates and large relative business will necessarily go together. Though it is true, as we think and have said, that all the roads which compete for the business of a place must treat its interests fairly, and not subordinate them to the interests of rival places; yet it must be expected that they will at all times have primarily in view their own interests, and that their zeal to procure business will bear some proportion to the anticipated profits. If New York business is most remunerative, it will be sought most eagerly; if not, the railroad managers will direct attention to that which is. Reducing the New York rates relatively to those of Philadelphia and Baltimore seems, therefore, to invite the roads to favor particularly the business of the two cities last named. Establishing differential rates in favor of Philadelphia and Baltimore holds out inducements to the railroads to favor the New York trade. The Pennsylvania Company may be expected to desire to carry freights past Philadelphia to New York if it can be paid for the additional haul, but to prefer to leave them in Philadelphia, if for the considerable distance from there to New York it will be paid nothing for the transportation. Thus what each city asks, appears to have some tendency to enlist the selfish interests of the railroad companies against it. We mention this among other circumstances affecting the question, without deeming it necessary to remark upon it further.

#### THE PRINCIPLES THAT SHOULD CONTROL.

It seemed to be taken for granted, in the arguments presented to us, that the existing differentials had not been determined on any principle, but that they were the result of a compromise between the railroad companies, whereby they had purchased peace between themselves. Three different principles, however, were suggested by different parties, as those which should control, and these found advocates in different localities, according as it was thought, those localities would be favored by their operation respectively. These three principles may be designated respectively: the distance principle, the cost principle, and the competitive principle. It is, however, proper to say that those who advocated the first and the second of these principles, generally agreed that the third should not be discarded; but that it had its legitimate place, and must have its legitimate influence also. Brief notice will be taken of these three principles respectively.

#### THE DISTANCE PRINCIPLE.

It was contended by the commercial representatives of Philadelphia and Baltimore, that freight charges on like classes of freights between the interior and the seaboard cities ought to be proportioned to distance. We understood them to mean by this, that the shortest line from Chicago to each of the Atlantic cities should be taken as the standard for measuring the freight charges between Chicago and that city, and that the charges for all the cities should then be determined by the mileage. By referring to the accompanying note, it will be seen that if the mileage standard were adopted, the freight charges between New York and Chicago would be about 10 per cent. greater than those between Philadelphia and Chicago, and about 10 per cent. more than those between Baltimore and Chicago. Those between New York and Cincinnati would be about 28 per cent. more than between Philadelphia and Cincinnati, and about 38 per cent. more than between Baltimore and Cincinnati.\* According to the average rates on grain and provisions this year, the differentials have only been about 6½ per cent. in favor of Philadelphia, 10 per cent. in favor of Baltimore, and the distance principle would, therefore, on an average, increase them greatly. It was urged therefore, that it was by this principle that the several roads constituting a competing line are accustomed to apportion their joint charges, and that these very trunk lines adopt it in dividing the charges upon through freights with the roads from which they receive the freight, or to which they deliver it. The New York representatives, on the other hand, contended that the distance principle could not with any justice control, for the reason that distance does not measure either the cost or the value of the service; so that if adopted as the standard of charges, it would be an arbitrary standard, and the element of equity in the rates would be disregarded.

If there were between each of the Atlantic cities and the interior towns only a single line of railroad communication, some of the difficulties in the way of the application of the distance principle, which are now obvious, would be wanting. But, as has been said already, every one of those cities has several lines, and would be content with no less. The sup-

posed distance principle ignores this fact: selecting the shortest line to each city, to the disregard of the rest, and estimating the charges in proportion to its length. It might thus happen that the charges on freights from Chicago to the several seaboard cities, with all their roads taken into the account, would bear no proportion whatever to the distance; and it is certain that as between the roads serving the same city, the supposed principle could not be applied at all, for they, irrespective of distance, must conform to the lowest rates. The distance apportionment would, therefore, not be an apportionment of principle, but only of expediency; and whether expedient or not, must depend somewhat on other considerations, which present themselves in the practical administration of railroad affairs.

It cannot be said, however, that distance is a circumstance without value in the determination of railroad tariffs; it is, on the other hand, one of much importance. Nearness to the producers and consumers of the articles which it handles is a great advantage to any city; and so far as the rivals of New York are possessed of this advantage, they are justified in expecting that it will be recognized. But the value of this advantage is a question that must be determined with many other things taken into the account, and can only be fully solved in the tests of competition. The general fact now is that distance does not determine railroad charges, and that where competition is most active it influences them the least. The distance principle does not, therefore, stand the test of competition, and so far as we can perceive, there is no possibility of establishing it except by subordinating competition altogether to it. But to do this would require an exercise of arbitrary authority which we do not understand those who advocate the distance principle to advise or desire. We must conclude, therefore, that distance cannot supply for us the controlling principle, and that its proper influence upon transportation charges cannot be determined either arbitrarily or as a matter of antecedent computation or estimate.

#### THE COST PRINCIPLE.

New York parties who rejected the distance principle were inclined to favor the grading of rates by the cost of service; and if this were done, they claimed that the differentials would disappear altogether. Cost of service is here employed as synonymous with the phrase cost of moving freight, which is most commonly used. The latter phrase, however, is used in two very different senses, which it may be important to distinguish in order to avoid misconception. Railroad companies use the phrase for their own purposes when making reports to their stockholders or for the public under the requirements of state laws. In such reports cost of moving freight will be understood to be the actual outlay by the railroad company in moving its freight over a completed and equipped road. This outlay will embrace the cost of fuel, the compensation to the regular freight agents, to freight solicitors, if any, to the servants employed to handle the freight and govern and move the trains. It must also embrace the necessary expense of keeping good the freight equipment, and it should include a fair proportion of all such expenses of the company as are incurred for the freight and passenger traffic in common, such as repairs of track, taxes official salaries, legal expenses, office expenses, general advertising, etc. To all these must be added the cost of insurance against losses to freight and freight equipment by casualties of all descriptions, or of making good such losses. If all these items are added together, and the sum total is divided by the number of tons of freight moved one mile upon the road, we have as the result the average cost of transporting a ton of freight for one mile of distance.

The report which gives these items will also give others that, as between the railroad company and its patrons, must be understood as constituting a part of the cost of service. If the company owes debts, the interest paid upon these should be included; if it has made dividends to its stockholders, the amount should be included also. Indeed, it is generally conceded that the cost of service should rightfully and equitably be made to include a fair return in interest or dividends on the cost of the railroad investment; though as to what return is fair and reasonable, differences of opinion are held and expressed. But for our present purposes it is sufficient to leave any such differences out of view, and to speak in general terms of the cost principle as that which would measure the railroad charges by the cost of service, and which would make the cost of service embrace the actual outlay of the railroad company as above explained, and a fair return in interest or dividends on the cost of the road and its equipment.

To show that the cost principle would be to the advantage of New York, it became necessary to show that the cost of transporting freight between New York and Chicago was, or ought to be, less than the cost between Philadelphia and Chicago, or Baltimore and Chicago, or at least that it was not greater. But upon this point, unfortunately, the information that was produced before us did not appear to be very precise or very accurate. The expressions of opinion were indeed clear and strong, but they were generally supported by argument and inference rather than by evidence. Our attention was not directed to official reports or figures, where or by which the actual cost was set forth, but rather to the topographical features of the country between New York and the head of Lake Michigan, which, it was said, offered admirable facilities for the construction of railroads, which would be economical in original outlay, and economical also in their operation. No such economical road, it was said, had been or could be constructed further to the south, and the unfavorable gradients and curvatures on the Pennsylvania and the Baltimore & Ohio roads more than deprive them of all the advantages which they possess in shorter distance. It was also urged that another important circumstance should be taken into the account when the cost is being estimated. By far the larger portion of all the freight carried by the trunk lines is eastward bound. When cost is considered, the probability of return freights must be taken into the account, since to whatever extent the cars which convey freight to the seaboard must be returned without loading, the cost of the return must be reckoned as part of the cost of transporting the eastbound freight. And it was confidently asserted that the probability of obtaining remunerative return freights was much greater at New York than elsewhere on the Atlantic coast.

To make out the case of more favorable lines and gradients between Chicago and New York, the route is required, after it leaves the shore of Lake Erie, to follow substantially the course of the Erie Canal to the Hudson, and thence down that river. By that route a road has been constructed with few unfavorable grades and curves, and this road no doubt is or can be operated with much greater economy than would be possible if its line were through a mountainous region. But if we take this as the route for the freight transportation between New York and the interior, and compare it with the routes to Philadelphia and Baltimore over the roads which carry most freights to those cities respectively, we commit the mistake of directing our attention exclusively to the one road which possesses this favorable line, and ignoring altogether the fact that New York has other roads which it is desirable for its interest should live and prosper, and that over each of them the active and energetic merchants and manufacturers of that city are seeking the business of the interior and inviting its custom. Every one of those

#### \* DISTANCES VIA THE SHORTEST RAIL ROUTES TO

	Boston.	New York.	Phila.	Baltimore.
Chicago.....	1,009	900	823	802
Burlington, Ia.....	1,216	1,106	1,300	995
Cincinnati.....	927	743	667	576
Columbus, O.....	807	623	547	512
Cleveland.....	671	580	504	483
Detroit.....	734	673	682	661
Indianapolis.....	951	810	735	700
Kansas City.....	1,487	1,324	1,248	1,192
Louisville.....	1,161	870	794	706
Memphis.....	1,438	1,247	1,171	1,083
Milwaukee.....	998	947	908	887
Omaha.....	1,503	1,393	1,317	1,294
St. Louis.....	1,212	1,050	973	917
St. Paul.....	1,418	1,308	1,232	1,211
St. Joseph.....	1,478	1,358	1,280	1,223
Toledo.....	784	693	617	598

Taking Boston as the standard, New York averages 12 per cent. nearer to these towns, Philadelphia 18, and Baltimore 22 per cent. nearer.

Between New York and Chicago the line of the Pennsylvania Railroad is 47 miles shorter than that by the Erie and its connections, 50 miles shorter than that by the New York Central and its connections, and 114 miles shorter than that by the Baltimore & Ohio and its connections.



roads brings to New York a large amount of trade which would not be obtained without its facilities; and it seems certain that New York cannot afford to ignore any one road, any more when it is settling its grievances with rivals than when estimating advantages over them. If, therefore, it be demonstrated that the New York Central and its connecting roads can transport western products from the interior to New York as cheaply as the more southern roads can move them to Baltimore or Philadelphia, it may not follow that the interest of New York would be subserved by the adoption of the cost principle and the bringing of the charges on freight transportation to and from New York to the test of what the Central could afford. Prudence would require that at least the probable consequences should be considered: and if among these consequences should be the possibility of some other line to New York being found unable to endure the test of the cost principle, this of itself ought to raise some doubt whether the city of New York could be interested in establishing it. Now the very claim that is made in behalf of the New York Central route, as one of remarkable economy, assumes that the Pennsylvania route is less economical; and the assertion that the Central can carry from Chicago to New York as cheaply as the Pennsylvania can carry from Chicago to Philadelphia, contains within it—since the less is contained in the greater—that the Central can carry from Chicago to New York cheaper than the Pennsylvania, which only reaches New York by carrying past Philadelphia, can possibly do. The application of the cost principle, if made under such circumstances, must force the Pennsylvania to this alternative: that it must carry at rates which will not give to the company a fair return in profits, or it must give up competition for New York business; and the Erie, whose line is also assumed to be less favorable than that of the Central, might be compelled to face the same alternative. It probably would not be contended that either the Grand Trunk or the Baltimore & Ohio, whose lines to New York, through connecting roads, are so much longer than those of the Pennsylvania, could compete at all for New York business under a strict application of the cost principle. The natural tendency of its application would, therefore, be in the direction of throwing upon one of the existing lines to New York the bulk of the New York business, to the destruction of the others, and to the final destruction of competition. It is not to be assumed that this is what New York desires. Every great city finds it conducive to its prosperity to secure as many of these avenues of trade and travel as possible; and it is certainly not more important to gain a new line than to preserve one already in existence, and already equipped with all those powers of usefulness which a new project can only promise at some time in the future. If, therefore, the cost of principle were to be adopted for regulating the charges as between the competing cities, it would seem that New York ought to bring into the calculation not one road only, and that the one most economical in construction and operation, but all the roads which contribute to its prosperity, and which it desires to retain.

At Philadelphia and Baltimore it is asserted with great confidence, that over no one of the New York roads can freights be conveyed as cheaply from Chicago to New York, as they can be over the Pennsylvania, and the Baltimore & Ohio roads to Philadelphia and Baltimore respectively. For this confidence certain facts are stated which are supposed to be sufficient to produce the result, and official reports are cited as evidence that the result has followed. The favorable lines of the New York Central, and its affiliating roads, are admitted; but it is contended that all the advantage of these is more than neutralized by greater distance and the greater cost of fuel to the New York roads over those to the south of them. The Pennsylvania, and the Baltimore & Ohio roads find the coal, which represents the motive power, in beds at various points on their lines, and can take it up for use at little more than the cost of handling; while the New York roads, on the other hand, and specially the Central, must transport the coal for a long distance at a cost two or three times as great. This cost constitutes a very considerable part of the total expense of moving freight, and it cannot be overlooked or treated as of little moment.

The official figures to which attention was called to show the greater cost on the New York lines are to be found in the reports of the New York Central, the Erie and the Pennsylvania, made by the directors to the stockholders, to show the operation of the roads for the years 1880 and 1881. In those reports estimates are made of the cost to the companies respectively of moving one ton of freight for one mile of distance, omitting from the calculation the items of interest and profits. The reports, as will be seen on referring to the note in the margin, make a very unfavorable showing; and if the figures told the whole story, and if we could be assured that they were made by each company on the same basis, they would go very far toward justifying the other cities in the claims they make. But, unfortunately, these reports are, for our purpose, of little value. They cover too much in some respects, and too little in others, to give us the information we need. 1. The trunk-line companies report the cost over their own roads only, and do not include the cost over the feeder roads; but what we need to know is the cost of transportation over the whole line from western points to the seaboard. 2. The companies in their reports do not discriminate between the cost of transporting local freight and through freight, but endeavor only to give the average cost of moving both. But here the reports embrace too much for our purposes, for on this inquiry we are interested only in the cost of moving through freight. If the freights over all the roads were similar in kind, and if the proportion of through freight to way freight were nearly the same on all, the report of average cost might be accepted as indicating the proportionate cost to each road of its through freights. But we must take notice of the fact, which is matter of common knowledge, that the character of local freight is exceedingly diverse on the different roads, and that the cost of handling is far from being uniform. If one company, for example, handles coal in large quantities as way freight, loading a train completely at one station, and moving it to another for complete unloading, the cost of such business would furnish very unsafe and unreliable means of comparison with that of the local freight of miscellaneous articles, which another road might pick up in small quantities at many way stations, and deliver at as many more. But these railroad companies, unfortunately, have as yet agreed upon no uniform method of keeping accounts, whereby they may determine, by the same standards, the actual outlay of the roads in moving their freights. It would seem that there ought to be no differences in this particular; but the official reports sometimes disclose on examination that the diversities are very considerable, and are not infrequently met with in the accounts of the same company. One company, for example, when it is able to make such betterments as station houses, warehouses and side tracks from its current receipts without increasing its

indebtedness, may charge the cost to operating expenses, while another under similar circumstances would charge them to construction account, and still another would include them in operating expenses for time being, and at the end of several years perhaps transfer them to construction account for the purposes of a new issue of stock. Evidences of these different methods of procedure appeared in reports of different companies, which were made use for their information or for the purposes of illustration before us. It is no doubt undesirable that there should be this diversity in practice; but while it exists it is necessary to take notice of it. If concert of action among railroad managers could bring about a uniform system of accounts, so that the official reports based upon them, which are made periodically for the information of shareholders, might give valuable and reliable information and means of accurate comparison to the public as well, the change in methods would be likely to prevent many misconceptions and misconstructions of corporate action which now arise in the public mind, and which lead to both public and corporate annoyances.

For all the reasons assigned, we are without reliable information by which to apply the cost principle in the regulation of charges of transportation between the Atlantic cities and the interior, and we cannot say that the application would be to the advantage of New York. *Prima facie* the case seems to be against New York, especially when the Pennsylvania Railroad, which constitutes one of its most important lines, is taken into the account. It is very manifest that that railroad can leave freights at Philadelphia more cheaply than it can transport them the additional 87 miles to New York, and probably it can deliver them for still less at Baltimore, since the unfavorable grades of the road, to which much importance was attached in the New York arguments, are all passed before Harrisburg is reached, and from that point the line made use of by the Pennsylvania to reach Baltimore, is shorter than the line to Philadelphia.

The favorable influence which the concentration of foreign commerce at New York ought to have upon railroad rates between that city and the interior, may perhaps be something, for freight tariffs ought to be, and will be, arranged with regard to the probability of compensating freights in both directions. When a railroad company can have freights in one direction only, and must return its cars empty, it must necessarily make the freights pay for the cost of the return. In the eastern and western transportation we have an illustration of this state of things. It is matter of familiar knowledge, that much the largest proportion of freight is eastward bound, and that large numbers of unloaded cars are constantly being sent west over all the roads. If the course of trade were such, that any one of the Atlantic cities sent out by rail as much freight as it received, its advantage over the others would be obviously very great. Railroad companies could afford to make much better rates upon all freights bound to the city from which they were certain of compensating return loads. It is proper, therefore, that railroad companies should take into consideration the condition of things in this regard, and every participant in foreign commerce has a right to expect that this will be done. We have therefore directed our own attention to the differences in the freights received and those sent out by the four leading Atlantic seaboard cities over the four American trunk lines, and have given in a marginal note the aggregates for the year 1880, which will be sufficient for the purposes of approximate comparison.\* The table shows that the proportion of freight sent out from New York over these roads, when compared with that which is received from them, is considerably greater than the proportion at either Baltimore or Philadelphia, but it is nevertheless only as one to four and a quarter, and it is manifest that not only must a large proportion of all the cars which go loaded to New York return without loads, but that a much more considerable number must so return from New York than from either of the other cities.

While, therefore, New York has an advantage over its rivals, in the larger proportion of west-bound to east-bound freight, the advantage, if estimated by the bulk, is not very great. And it must be borne in mind that these four cities do not by any means furnish to the roads all their west-bound freight, but that they take large quantities from other towns along their line. It may be that New York west-bound freights average highest in the freight tariffs, but even then the relative advantage of New York will probably be less considerable than some of its advocates have supposed. And on a careful examination of all the arguments advanced at New York, we are not satisfied that a strict application of the cost principle, if it should be found susceptible of application, would be likely to benefit the trade of that city in its rivalry with the other Atlantic cities.

But if the exact cost of transporting freight by rail were attainable, could it be made the standard whereby to measure the charges as between competing cities? We do not consider now what might be just and right as between a railroad company and its patrons if the case of any railroad company could be taken up and considered by itself apart from all others, but of what is practicable in view of existing facts. If the cost principle could be applied, we do not see how the railroad companies of the country could justly complain of it. If they could all receive for the transportation service the cost of the service, as above explained, they would benefit their average condition very greatly by accepting it, for they are not now receiving on an average, anything near the average legal interest of the country on the cost of their investments.† Many of the companies—perhaps the majority of them—in order to realize cost, would be compelled to increase their charges very considerably, while others, including perhaps some of these trunk lines, might be called upon for a reduction. The general result would be, not a diminution of charges, but an increase; and it is hardly probable that the country at large would be satisfied with the change, though it might affect particular localities favorably. Moreover, we are to consider that the question of the application of the cost standard to railroad charges arises for discussion and settlement after cities have been built, routes established, canals made and railroads constructed; and that the solution of the question may affect all these beneficially or otherwise to an extent that is beyond present calculation. We have not an unset-

\* Freight tonnage by the four American trunk line roads for the year 1880:

	Received.	Sent.
New York.....	4,266,830	1,022,612
Boston.....	913,887	309,232
Philadelphia.....	1,553,381	290,474
Baltimore.....	1,559,251	241,690

As the business with the Grand Trunk of Canada is not covered by this statement, it will be readily understood that the statement is not so favorable to Boston as it should be, as its business with the Grand Trunk is very large.

† In Poor's Manual the aggregate cost of the railroads of this country and their equipment to 1881, is given at \$4,653,609,297. The railroad companies paid in 1880 in dividends, \$77,115,410; and for interest on bonded debt, \$107,866,328. To 1882 the cost was \$5,577,996,931. There was paid in 1881 in dividends, \$83,344,200, and for interest \$128,587,302. It will be seen that the dividends and interest together are about four per cent. on the cost of the roads and equipment; the dividends being much the smaller part. No doubt there is much "watered" stock, and a large allowance may be made therefor, without affecting the accuracy of the statement in the text.

led country before us to plan and make laws for, whose people when they select their homes and places of business can calculate the result of existing rules and regulations upon the towns they build, or the industries they establish; but the towns already exist, and have been created at immense cost in view of advantages which were supposed to make them attractive and desirable as location for trade and commerce; and their existing importance as the homes of great numbers of people, and as the centres of vast manufactures and immense exchanges gives them claims upon the country and upon those who have in any degree the material interest of the country in charge, and gives them powers of defence also when assailed in the rivalry of business, which are not to be overlooked or lightly regarded.

These several towns, it is true, came into existence under circumstances which may be different from those which now surround them; and in view of advantages, which in many cases have been rendered comparatively unimportant by subsequent improvements and inventions—as canal and river navigation in many parts of the country has been rendered unimportant by the invention of the locomotive and the iron road—but the towns themselves, their people and their business, remain as great and sturdy facts, which neither the country can overlook, nor the government of the country, nor any of its public agencies. The continued existence of these towns is to be assumed, and their welfare is to be calculated for when laws are made, or regulations having the effect of laws are established. It would be as inadmissible and as unjust deliberately to plan and arrange for the gradual destruction of a great city through the slow but certain annihilation of its business, as it would be to bring destruction upon it by fire or pestilence; and we are not to contemplate with complacency an offence of that nature against organized society. While it is not the province of government to build up cities for its people, it is its plain duty to permit the cities the people build to live; and it should so shape its own action as to allow every town, as far as possible and reasonable, to avail itself of all its natural and acquired advantages in addition to the prosperity, happiness and comfort of the local community. This seems too plain and indisputable a proposition to be contested by any official authority or public agency.

In a certain sense railroad companies are public agencies, and in some degree they exercise powers which are quasi governmental. They make regulations for their business to which the general public are expected to conform; and these regulations are, in some respects, as important as the police laws established by the state itself. Among these are the regulations respecting charges for railroad service. According as these are heavy or light upon the traffic of a particular locality, its trade is likely to decline or prosper, and so dependent is commerce upon railroads that the growth of a town is likely to bear some proportion to the extent of its railroad facilities, and the liberality with which it is treated by railroad managers.

We should consider then what might be the effect of a strict application of the cost principle as between the competing Atlantic cities, say for illustration, the cities of Baltimore and New York. Baltimore is now a large and prosperous city; it is the chief business centre of a territory larger than any one of the States, and millions of people find their business favored, and their prosperity and comforts enhanced by its existence. One of the most costly roads of the country, with extensive connections and feeders, has been created, with almost exclusive regard to Baltimore business; and the road will prosper if the city prospers, and lose its importance if the city decays. A great number of private individuals and public and private corporations are interested in the stock and indebtedness of this railroad company, and would be subjected to embarrassment or suffering if it were forced into bankruptcy. For all these reasons the welfare of Baltimore is a matter of national importance, and it is so connected with the trade of the interior that its existence modifies beneficially all the markets. But its relations to the foreign trade are also such as to render it important to the whole civilized world.

But New York has some most decided advantages over Baltimore, of which its people have availed themselves with great ability and energy. The growth of that city has not been checked by the marvellous prosperity of other towns, and its relative superiority in both foreign and domestic commerce has been substantially maintained. Though Baltimore is much nearer the grain fields of the West, New York still draws to itself much the larger share of the harvests, and it has done this in spite of the fact that, with temporary and unimportant exceptions, the differential rates have at all times been largely against that city. Suppose now that under an application of the cost principle the differentials could be abrogated; what would be the effect upon Baltimore? Would it deprive that city of the share in the trade of the country, which its location, its great expenditures and the skill and enterprise of its people have hitherto secured for it? Would it check the growth of the city, sap its prosperity, and bring ruin upon those everywhere whose business arrangements and investments have been made with a view exclusively or mainly to the trade of that city? And if so, would the result be one that the country could contemplate with satisfaction as the just result of the proper application of a sound principle, and that those having influence in railroad affairs could justly and properly plan for, labor for and shape their tariffs to accomplish?

On the other hand, suppose the strict application of the cost principle should be found to require that the differentials against New York should be doubled, would it be admissible to double them irrespective of all consequences to the trade and prosperity of that city? That these consequences might prove disastrous if the principle could be upheld and enforced, seems certain, for it would give advantages to the town most favorably located for cheap commercial intercourse for which the others could have no compensation. But this very fact—if there were no other impediment—would render the application of the principle impossible. A great city possesses great powers of self protection, and it must exercise them to the fullest extent when the need comes. Great railroad corporations cannot, in their rivalry with each other, accept principles of action which must necessarily impoverish them. If the Baltimore & Ohio Railroad would lose its business under the application of the cost principle as between it and the roads north of it, it must accept less returns upon its business, and it must continue the struggle even though no more than operating expenses be realized, rather than submit to destruction without an effort at self-preservation. This or something like it must be the inevitable result, for neither cities nor transportation companies can or will accept a principle which it can be seen in advance must build up some on the ruin of the others.

But when it comes to applying the cost principle to the several lines which serve the same city, it is at once perceived that the difficulties are insurmountable. The application must of course be made on estimates of probable results, and the estimates will have in view a percentage of profits which it is expected or hoped will be realized. But with four or more lines of very different length competing for the same business, it is evident that cost must have, when applied to their business, very different meanings. If the shortest and cheapest line makes its charges on a calculation of say 10 per cent. profit, the longest and most ex-

\* Cost of moving freight per ton for one mile of distance:

On the New York Central, 1880, 5.41 mills. 1881, 5.62 mills.  
On the Erie, " 5.34 " " 5.29 "  
On the Pennsylvania, " 4.74 " " 4.37 "

No corresponding figures are given in the reports of the Baltimore & Ohio R. R. Co.



pensive must conform to the charges, even though they be such as will insure no profit at all. One company may then carry at a cost which includes 10 per cent. profit, another at a cost which includes say 30 per cent. profit, while the third barely pays its operating expenses and repairs, but still obtains the cost of moving the freight. Competition obliges the companies to take what they can get, and to satisfy the demands upon them from it; but when the cost standard is so uncertain and elastic that it may include profits when they can be earned, and must exclude them when they cannot be, it is evident that it cannot be a standard of general or just application. It is impossible that anything can be a governing principle, which, in the nature of things, cannot have the same meaning to the several parties who are to be affected by its application.

That the cost to the roads themselves of moving their freights, irrespective of profits to shareholders, has much to do in determining the charges is, we think, unquestionable. It certainly must have influence so long as competition between lines exists, for the most economical line may fix rates on a consideration of what its favorable circumstances will enable it to endure, and all others must accept them whether they prove satisfactory or otherwise. One cheap line may thus give to a town the benefits of cheap transportation, not as an application of the cost principle, but because its favorable circumstances enable it to do so consistent with its own interests.

The idea was not put forward in any of the arguments that the application of the cost principle could be made universal, and that every railroad company should apply it in its own business as between the different kinds and classes of freight. The difficulty in doing this as a mere matter of accounting would be very serious, but there would be other difficulties which would be more important to the general public. The chief of these would be this: That very many articles would not bear transportation for the very considerable distances for which they are now carried if the charges upon them were graded strictly by the cost. If their bulk or weight is large in proportion to their value they must be carried cheaply or they cannot be carried at all; and freights are therefore classified in the tariffs so that the lighter but more valuable articles are made to bear a burden out of proportion to the cost of carriage in order that the roads which carry them may be enabled at the same time to serve the public in the exchange of articles and products whose value will not admit of like charges. Some discriminations of this sort are essential to enable railroads to answer the expectations and meet the needs of the public. It must often happen also that where two or more roads are competing for a particular business one of them must carry, what it gets of it without profit and must find its profit elsewhere. If the competition under such circumstances leads to the road carrying one kind of traffic at a loss, which is made up by an increase of burdens on the remainder, a wrong is done of which complaint may justly be made. But there is no inherent wrong to any one in a road conveying without profit, but also without loss, a business which it must accept on those terms or decline altogether.

#### THE PRINCIPLE OF COMPETITION.

If neither distance nor cost gives us the governing principle we must next see whether we are to find it in competition. In nearly every other kind of business the competition of those engaged in it is the great regulator of charges and the operation of natural and familiar laws of trade prevents extortion and brings about substantial uniformity. Will competition do this in the business of transporting property by rail? If so, is not the competitive principle the true principle? And will not the competitive principle make cost and distance elements in the determination of rates and allow to each its just value according to the circumstances?

We should be glad to feel able to give to these questions an unhesitating answer in the affirmative. We have found, however, in the course of our investigations, that a species of competition has prevailed from time to time, which has brought satisfaction to few persons, if any, and which has resulted in inequalities and disorders greatly detrimental to trade. Such competition exists when the railroad companies, or those who are permitted to solicit business and to make contracts on their behalf, set out with the determination to withdraw freights from their rivals, and secure them for themselves, at all hazards, and regardless of gain or loss; and when acting upon this determination, they throw to the winds all settled rates, and in the desperate strife for business, offer any inducement in their power which will secure it. The country not long since had experience of such a season, and everywhere we listened to complaints of the injury which legitimate business suffered from it. It was said by parties interested in transportation that the inauguration of such a strife put an end for the time to all possibility of calculating from day to day what would be the cost of carriage, and what could be safely paid or wisely accepted for grain, provisions, or other articles, destined to another market by rail. The control of railroad rates, and, to a large extent, of all railroad business, then passed out of the hands of the legitimate and regular corporate managers into the hands of solicitors for fast freight lines and other agents, who made from day to day, and from hour to hour, such terms with those having business as would secure it, but generally made secret terms—that the bargain with one man might not prevent their driving a better bargain with another, as they might find opportunity. Under such circumstances persons were favored and localities were favored, when the object to be immediately accomplished seemed to require it—regardless of the just maxims of legitimate business, and of the rules of the common law, which enjoin upon common carriers that they shall deal with all customers upon principles of equity and relative fairness. Legitimate business, it was said, necessarily passes into an unsettled and speculative state while this condition of things exists; safe and close calculations are impossible; transportation becomes cheap, but neither producer nor consumer is certain to reap the profit, for the middleman cannot calculate upon steadiness in low rates, and as he takes the risk of their being raised upon him, so he is in the best position to appropriate the benefit while they continue. Meantime, railroad profits disappear, and dividends cease to be paid, to the great distress of thousands who rely upon them for their living; and every interest, in any degree dependent on railroad prosperity, must participate in the depression and disaster which accompanies the ownership of railroad shares.

The mere statement of these results is sufficient to show that this is not what in other business is known and designated as competition. Competition is the life of trade, but this is its destruction; competition brings health and vigor, and secures equality and fairness, but this paralyzes strength, and makes contracts a matter of secrecy and double dealing. In competition, the sound dealer, operating upon his own capital and upon well-established credit, has the best chance of success; but in the sort of competition we have mentioned, it is found that the bankrupt corporation has the advantage, for its managers, having nothing to lose, may offer rates which solvent roads cannot meet without being dragged into bankruptcy with them. Railroad managers do not concede that this state of things is properly designated competition, but they speak of it as an unnatural condition of railroad hostility; as unreasoning railroad warfare; as competitive strife, rather than competition. It is a state of things that, like a war between nations, from

its very destructiveness, cannot be a normal condition, but must speedily terminate in peace or in disaster. It has usually been terminated by a common understanding between railroad managers upon a tariff of rates.

But this common understanding, it is argued, in some quarters, eliminates competition from the sphere of railroad business, and we escape the evils of competitive strife by embracing those of monopoly. This is denied by railroad managers, who insist that understandings respecting the reasonable management of their business are not only entirely consistent with competition, but that they are the only means whereby the excessive competition at some points can be prevented from operating oppressively at others. It is no doubt true that competition tends to produce some great inequalities, and that care ought to be taken to prevent this. It should never be forgotten that the transportation of property and persons by railroad is not exclusively a private business, but is carried on under franchises granted by the State, which confer upon the owners functions of a semi-public nature, and charge them with certain public duties. The railroad manager, operating under such a franchise, must harmonize the interest of his road with the public duty, and he cannot make self-interest the exclusive guide, as a merchant may, or a farmer. One of the chief of these public duties is to make only reasonable charges, and to regulate and apportion these among the customers of the road on principles of equity and relative equality. But the operation of competition is perpetually in conflict with this duty; it is felt unequally along railroad lines; it will be active at points where several lines can compete; it will be moderate at others where there is little to excite it, while at still others there can be no competition, because there is but a single road. But the capital of a railroad company is planted on a certain line; it must be made available to its owners there or nowhere; it cannot be removed when found unprofitable, as a merchant may remove his stock of goods; and the tendency of excessive competition is to cast upon the business of non-competing points a cost for transportation which puts them to great relative disadvantage, and in extreme cases may prove ruinous. The local traffic is likely to experience this result most severely, and the more completely any particular line occupies a territory, the more is the local traffic exposed to peril. The New York Central Railroad, with no connections west of Buffalo, would be a mere local road, and must find remunerative returns upon all its immense investments from the local business; as a great through line, it is enabled to cast upon through traffic a part of the burden which local traffic must otherwise bear; but if under the stress of unreasonable and excessive strife for through freights that class of freights is carried at a loss, this loss must either fall upon the corporate shareholders, or it must be cast by the corporation upon the shippers of local freights. It must be assumed that railroad boards will always seek to so arrange their tariffs of rates as to secure a satisfactory net profit; and if a part of the business pays too little, the remainder may be made to pay too much. This is not a beneficial result of competition, or one consistent with the obligations of the railroad companies to the public. No one disputes or doubts that for the general public the business of transportation by rail is in the most desirable state when it is so conducted that the charges for moving property are distributed with relative equality over all the business, so that a moderate profit may be reaped from all, and the support of the road, and profits to its owners, not be exacted wholly or mainly from one portion of the business to the exemption of the remainder. But it is only when it is in that state that railroad companies are complying with their common law obligation as carriers. If they are sacrificing the interests of one class of shippers in the reckless strife to obtain the business of another, it is plain that they cannot be dealing impartially or making charges which are relatively just. And certainly no city can be interested in having the trade which is nearest to it, and which is the trade of the people constituting its best and largest customers, sacrificed to the trade with the people at a distance, who deal with it much less.

It is a fact of which the railroad companies are entitled to the full benefit, that the charges for railroad service have steadily declined, even when the railroads have been so conducted as to avoid competitive strife. Mr. Poor, in his summary of railroad operations for the year 1881, prepared for the annual report of the Interstate Commerce Commission, and shows that within a quarter of a century the average charges for the transportation of property on three of the great railroad lines of the country have been reduced more than 70 per cent., and that the reduction has continued to go on until the present day. Some of the reasons for the reduction are traceable to competition and some not. The growth of railroad business has kept pace with the reduction of the charges upon transportation, and the two have acted and reacted upon each other as cause and effect. When the merchandise or products of one section of the country, for which there was a demand in another, would not bear transportation at existing rates, the railroads have been compelled to reduce the rates as a necessary condition to obtaining the property for carriage; and the reductions which are made in some cases from necessity are made in others from policy, because it is found that they stimulate industry, build up manufactures, and bring profits to the railroad companies in the great increase of business which is thereby prepared for them. In all these cases the common interest of railroad companies requires that they should yield to any public demand for the reduction of rates so long and so rapidly as they find they can do so with justice to their shareholders; and they have generally found that the net results were such as, from a selfish standpoint, would fully justify the reductions. Common understandings between railroad companies in many such cases might tend to equalize and steady the rates, but would be grossly impolitic and unreasonable if they were directed to the maintenance of such freight charges as would operate as a check upon transportation, and thereby reduce their own net revenues.

But there are influences bearing upon the charges for the transportation of property which are beyond the reach of the railroad companies altogether, and which no combination among them can control. The transportation of the products and merchandise which the different sections of the country exchange with each other is only in part in railroad hands, and the carriers by rail are at all times subjected to a competition which is not only active and vigilant, but is possessed of some most important advantages. It will readily be inferred that we allude here to the carriers by water. For the whole distance from Chicago to New York the owners of boats on lake and canal are bidding against the railroads for freights. Much of the time they are offering rates which the railroads cannot meet without loss, and during the season of water carriage they would take away from the railroads nearly all the heavy freights, if it were not that the more rapid transit by rail has some advantages of which shippers find it for their interest in many cases to avail themselves. But even with these advantages the railroads find themselves compelled to make their charges approximate the charges of carriage by water, or the great bulk of heavy freights will inevitably take the water route. Thus the competition by water operates in reduction of railroad tariffs, and no understanding among railroad managers can prevent it. When the Erie Canal is closed for the winter

the railroad companies are enabled to advance their charges; but even in the winter they feel the competition of the water route; for excessive charges will not be paid, but grain, flour, provisions and other heavy articles, instead of going forward by rail at what seem to shippers extortionate rates, will be placed in store until the water route is again open. Nor is the competition with the water route felt exclusively by the roads to New York; for unless the seaports to the south afford better markets for Western products than is found at New York, which they seldom or never do, the roads leading to them will be cut off from carrying these products if their charges are made to exceed the charges to New York. The favorable influence of the water route upon rates is therefore felt all the way to the Ohio and the Potomac, and the maximum of rates is fixed for all the roads by the roads to New York, with which the water route comes most directly and immediately into competition.

Under the competitive principle, a maximum of rates is thus established, and the railroad companies cannot prevent it, whatever may be their desire. But distance, cost, and many other circumstances may then come in to force still lower rates on the lines to the cities south of New York. If it is found that the roads leading to Baltimore will not obtain a reasonable share in the business without offering better rates than are given to New York, such rates will certainly be offered. They will submit to the rates which gives the business to other cities only until the trial proves the prejudicial operation. And when they reduce their charges, it will be optional to the New York roads to follow the Baltimore lead, and they may, no doubt, be relied upon to do so if their interests appear to require it.

But another most important factor in regulating freight charges is the export trade.

The prices of the leading American products, in the carriage of which the railroads compete most actively, are fixed in European markets. These products should net to the producer in the American market the foreign price, less reasonable charges for transportation and handling; and he is interested in having the trade open to the competition of as many buyers, and the transportation to that of as many carriers as possible. Of the Atlantic cities which compete for this trade, Baltimore and Philadelphia are nearest to the producer, but New York and Boston are nearest to the foreign market. Much is shipped to each of these cities for home consumption, but the major part of all that they receive is destined to a foreign market. Some of it passes from Western towns on through bills of lading to foreign ports, but the most of it is consigned to the merchants of the Atlantic cities, and is reshipped by them. Except at Boston, it has been found impracticable to distinguish between that intended for home consumption and that for foreign shipment; and, therefore, no discrimination in freight charges is attempted, but all is charged as if destined to a foreign market. But when so treated, the Atlantic cities become merely so many points on so many through routes between the interior of the country and the European ports, and the charges on shipments must regard the whole lines and not parts of them merely. On these several through lines, competing for the same business between the same interior American towns and the foreign ports, the whole charges, if the routes are equally favorable, must be substantially the same, or the one giving the best rates would obtain the business. The question of ocean rates must, therefore, have an important bearing on the inland rates; for if the ocean rates are greater from Baltimore to foreign ports than from New York to the same ports, the inland rates to Baltimore must necessarily be lower, or Baltimore will be excluded from the trade. Turning our attention, then, to the ocean freights, we find that during the year 1881, from Baltimore to Liverpool by steam and sail, they averaged nearly three cents per hundred pounds greater than from New York, and from Philadelphia nearly two cents greater. This is not conclusive of what they might be in another year, but it is indicative of a general condition of things. Besides this advantage in the ocean freights the New York route has a further advantage in the somewhat greater expedition. If, therefore, the railroads to Baltimore and Philadelphia were to charge for the inland carriage the same that is charged to New York, they must do so with the certain result of losing their present participation in the export trade. They must, therefore, of necessity, make their average inland rates at least as much lower than the inland rates to New York as will offset the differences in the ocean freights. This follows under the sway of competition from the same necessity which forces upon two merchants trading side by side in the same articles a concurrence in the same prices. Attempts by agreement or otherwise to counteract this law of competition would be of little avail, and of no avail whatever for any great length of time. All the leading articles of eastern bound freight would be affected by this principle and this would be so large a proportion of the whole as to govern the charges on all.

The differentials then appear to us to find their reason in competitive forces. A brief reference to their history will show that compact has not succeeded in controlling them. In 1869 there was an agreed difference in favor of Baltimore in the rates for the transportation of grain, of 10 cents per 100 lbs. But the effort to sustain this difference led to a war of rates, as a result of which it was reduced one-half. This lesser difference was maintained until 1876, when an agreement was entered into by the trunk line roads which based the rates on relative distances. But at the end of a month and a half the New York roads withdrew from this agreement, being satisfied that its operation was prejudicial to their interests. Then followed another war of rates, ending after a long struggle in the differentials now existing. The war of rates of 1880 was entered into to get rid of them, but it proved ineffectual, as before stated. They appear, therefore, to abide the tests of competition, and they have come, as prices generally do, under the exigencies of trade.

But it is, of course, possible that differentials may be just at one time and unjust at another; and it is insisted on behalf of New York that, whatever may have been the case heretofore, the existing differentials are no longer just to that city, and are no longer such as would result from a competition not hampered and restrained by railroad combinations. For evidence of the injustice, we are referred to statistics, which show that the growth of Baltimore and Philadelphia trade, especially in grain and provisions, has in late years gained rapidly on that of New York. This, it is said, is proof that the differentials operate against New York interests, and the New York roads ought to abolish them by reducing their own rates until they conform to the rates on the lines leading to Baltimore and Philadelphia. This, it is insisted, is what fair competition requires.

It might, perhaps, be a sufficient answer to this demand, that the attempts heretofore made to force equality of charges, though long persisted in, with no small loss to the participants, proved unavailing. But passing that fact without further remark, we direct our attention to the evidences that New York has suffered from the differentials. These we have not found of much weight. It is certainly true that Baltimore and Philadelphia have now a larger share in the grain and provision traffic than they had fifteen years ago; but it remains to connect the fact with the existence of the differentials. For a long time New York nearly monopolized that trade; but the reasons were obvious in its better channels of communication with the interior, and its greater pro-



arations to accommodate it. When Baltimore and Philadelphia had extended their railroad systems, so as to compete for the trade, and had provided elevators and other conveniences, they immediately took a share in the business; not because of the differentials, but because they were then prepared for it. But no evidences were produced before us that the Philadelphia and Baltimore business, to which the differentials are applicable, is now increasing more rapidly in proportion than that of New York, or that the growth of New York business is to any extent checked by them. On the contrary, there is abundant evidence that New York is fully maintaining its present lead, and that its trade is enjoying a growth so healthy and vigorous, that its commercial classes can well afford to regard, without envy or regret, the prosperity of other places, and may well concede to them, without repining, all the advantages which have come to them as a result of competitive efforts. The accompanying note will show the relative proportion of the total receipts of grain and flour at the four Atlantic ports which was received at each, and it will appear from the figures, that New York, during the last eighteen months, has gained on the others.\* How far ephemeral causes have contributed to this gain we cannot know but it is manifest that the evidence that New York suffers from differentials does not yet appear.

As the interior is interested in the subject of differential rates, and as the sharpest competition in freights is encountered there, so that its commercial classes are in a favorable position to judge of the forces affecting them, it has seemed to us no weak evidence of the justice and necessity of the differentials that the preponderating sentiment in the interior was strong and decided that the differentials were just. There was, indeed, some dissent, but this was the prevailing view.

In our discussion thus far, we have had but little to say of the case of Boston, or of the westward-bound freights. As to the latter, some of the considerations above mentioned would not apply, but the differences are not sufficient, as we think, to relieve New York westward-bound freights from the differentials. We were not invited by the commercial organizations of Boston to visit that city, and we refrained for that reason from doing so. We have reason to suppose that the seeming want of interest in Boston in the subject referred to was due to the fact, that no one seemed disposed to make any controversy in respect to the rates to that city. Boston claims the same rates with New York on the export trade, and the other cities do not appear inclined to contest the claim. This makes the charges less on foreign-bound freights than upon those delivered in Boston and other New England towns for home consumption; and to that extent works an apparent injustice. If the low charges on foreign-bound goods have the effect to increase the charges on freights for home consumption, it is an injustice in fact; but if not, and the Boston roads consent to carry at the low rates as a necessary condition to participation in the foreign trade, the other cities cannot well contest their right to do so. As the ocean freights from Boston correspond very closely to those from New York, the principal already stated is applicable; and we have no occasion to consider the case of Boston separately.

#### CONCLUSION.

It only remains for us to state that no evidence has been offered before us that the existing differentials are unjust, or that they operate to the prejudice of either of the Atlantic seaport cities. Differential rates have come into existence under the operation of competitive forces; they bear some relation to relative distance and relative cost of service; they recognize, as we think, the relative advantages of the several seaports; and they are subordinate to the great principle which compels the carriers of property competing between the same points and offering equal facilities to their customers, to make the same rates. We therefore cannot advise their being disturbed.

But we do not assume that the rates which are just to-day will be just indefinitely. They have become established by the force of circumstances, and they ought to give way if future circumstances shall be such as to render it right and proper. They constitute a temporary arrangement only; equitable, as we think, for the present, but which may become inequitable before the lapse of any considerable time. Whenever they shall be found to operate unfairly, and give a forced and unnatural direction to trade, and whenever it shall appear that they tend to deprive any one of the seaports affected by them of the proportion of business that would naturally come to it under the operation of normal competition, the want of equity in the rates will appear, and it will be right to modify, or, perhaps abolish them.

Railroad problems assume such different phases from year to year, and almost from day to day, that those who have authority in railroad matters may justly be expected and required to give their earnest attention and best efforts to making their franchises accomplish the great ends of equal, fair, prompt and beneficial accommodation which was intended in their grant. And those ends they should have in view in determining upon the continued existence of differential rates. Their observation of the general course of traffic from day to day and from month to month ought to enable them to determine whether the differentials are too large or too small; whether they are influencing trade unfairly and unnaturally, and whether they operate as an improper restraint upon competition, and when the improper effect is discovered, they ought to correct the wrong without hesitation or delay. To enable them to judge fairly and with full understanding, accurate statistics of their business should be kept by each of them, and submitted to the others or kept in some common office, and these statistics ought to be periodically given to the public also. Publicity is a great corrector of imaginary evils, and may be an important preventive of evils, both imaginary and real.

We do not assume or believe that there exists in railroad official circles any legitimate authority to determine the question of rates arbitrarily. Large powers of self-government have, undoubtedly, been left by the law in railroad managers, but all their authority is qualified by duty to the public; and it cannot be too often or too pointedly asserted that the obligation on their part to serve the public with relative fairness is of perpetual force. In their future dealings with the important question which has been the occasion for our coming together, the great trunk-lines should be particularly careful to give no occasion for just complaint, that they subject any one of the seaboard cities to the operation of arbitrary or unfair regulations or charges, or that they fail to observe towards any of them, or towards the people trading or desiring to trade with them, the mandate of the common law—to deal justly and distribute fairly the benefits and burdens which are incident to their occupation.

ALLEN G. THURMAN,  
E. B. WASHBURN,  
THOMAS M. COOLEY.

NEW YORK, July 20, 1882.

	1878.	1879.	1880.	1881.	6 mo. 1882.
New York.....	56.	52.6	53.5	56.5	62.9
Boston.....	10.	10.6	11.7	14.3	16.8
Philadelphia.....	16.7	15.3	15.6	11.7	11.6
Baltimore.....	17.3	21.5	19.2	17.5	8.7
Total.....	100.	100.	100.	100.	100.

## Contributions.

### The Cracking of Steel Boiler Plates.

TO THE EDITOR OF THE RAILROAD GAZETTE:

The paper of Mr. A. C. Kirk on the fractures of steel boiler plates, published in the *Gazette* of July 7, was read with some interest by your correspondent, in the hope that it would furnish a solution to a problem which has vexed the brains of scientists as well as practical mechanics. I find myself, however, in as much doubt as I was before perusing the article, and hardly think that his summary disposition of the matter, in attributing all failures of steel plates to inherent defects in the material in its ingot state, will be accepted by those who have investigated the subject. It is possible that the plate which came under his observation failed from the cause he gives, but that does not justify the assumption that the cracking of all other plates is attributable to the same cause. If he had given us more information in regard to this particular plate, whether it was of low or highly carbonized steel and whether it was made by the Bessemer, crucible, or open-hearth methods, it would have been of service in forming a conclusion. Now, it is claimed by the advocates of the open-hearth steel that by this process a plate can be made of uniform quality, such as the crucible process is not capable of, and that a large ingot

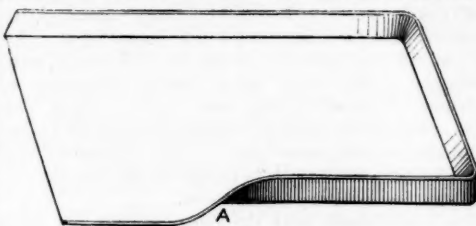


FIG. 1.

poured from several crucibles is likely to have hard and soft spots throughout the mass, which unfits it for making reliable boiler plates. If this is the case, and the plate referred to was of crucible steel, Mr. Kirk's conclusion may be correct in this particular instance, but it will not do to apply the theory to all steel plates. But it is not certain that the failure of this plate is attributable to the cause assigned by him. We should know all about the treatment it received in the flanging and annealing processes before we can assent to his deductions. We should know what kind of fuel was used in heating the plate, how the flanging was done and how it was annealed. In flanging a plate it is customary in most boiler shops in this country to heat from two to three feet of the edge of the plate—generally in a charcoal fire—and to bend about two-thirds of the length heated up to a right-angle with the plate, leaving the other third partly bent and on a twist running from the vertical flange to the horizontal plate, as at A. See sketch.

This curved edge of the plate is drawn out and thinned to some extent. At the next heat this portion is bent up on a line with the flange already turned, and in so doing it is upset and thickened again. If this work is done by an unskillful or careless workman, or the plate is over-heated or worked too cold, incipient cracks may result, which subsequent annealing will fail to correct. After the flanging is done the plate will be found to be arched up in the centre (the flange being up), and to correct this it is straightened by blows upon the flanges with a flatter and sledge, which of itself is a pretty severe test of the toughness of the metal. The annealing process, if well done, relieves the plate from much or all of the unequal strains put into it by the flanging operation, but if this is hurriedly done and the plate is thrown out to cool where currents of air may strike it, or if



FIG. 2.

there is much subsequent hammering done upon it to bring it "out of wind," there is danger that it may give way if it is subjected to the rough usage which Mr. Kirk recommends. So that if the plate brought in evidence by him had improper manipulation in flanging, or had been over-heated in places, or improperly annealed, there is a possibility that its failure was due to bad workmanship, and not to an "original line of weakness." I think, however, that the experience of master mechanics and boiler makers will bear me out in the statement that a very insignificant percentage of steel plates put into fire-boxes and boilers crack in working and while being made into boilers. The trouble generally arises after the boiler has been some time in use. In locomotives, fire-box plates usually last from five to ten years before cracking, and the cracks occur mostly in the long side sheets near the centre of the fire-box, and start from the lower row of stay-bolts and upwards from 1 to 3 ft., generally following a vertical line of stay bolts. This has been the feature of all the cracks, with a few exceptions, that have come under my observation, and it is absurd to attribute them—occurring as they do with such uniformity in direction and location—to lines of weakness in the original ingot. A plausible theory,

in my opinion, of the failure of steel plates in position, was proposed at a meeting of the Railway Master Mechanics' Association several years ago, based on the tendency of steel plates to shrink in dimensions after repeated heatings and under certain circumstances. A steel plate  $\frac{3}{8}$ -in. thick and planed by gauge 12 in. square, was heated uniformly over its surface, and no perceptible shrinkage was produced in its dimensions. It was then laid on an improvised furnace on a smith's forge and a strip 3 in.  $\times$  12 in. through its centre was exposed to the fire, and the two 3 in. side portions were protected by bricks and kept comparatively cool. By repeated heating and cooling the plate was reduced on a line through the heated portion a full quarter of an inch. See sketch (exaggerated):

It was assumed that the same contraction is liable to occur in the sheets of a fire-box on the line of the hottest fire—which is at or above the level of the bed of coal on the grate—if from incrustation, deficient circulation, deposit of mud or any other assignable cause the sheets become repeatedly overheated.

There is little or no hindrance to the contracting of the metal vertically, as the roof sling stays are generally slack when the boiler is cold, and the stay-bolts spring sufficiently to allow of the small amount of contraction necessary, consequently horizontal cracks in the box are rare; but the sheets are held rigidly by the bottom mud ring and the stay bolts through the end sheets, so that contraction is resisted in a horizontal direction and a tensional strain is put upon the sheets, which is only counteracted by the cohesion of the metal. A sudden change in temperature by the admission of cold water into the hot and empty water space, or a blow with a hammer on a stay-bolt may at any time destroy the equilibrium which exists, and the sheet is rent asunder with a loud report, and a vertical crack appears which is widest at the point where the greatest heat is concentrated, and disappears where the heat is more generally diffused and less intense. I see that Mr. Kirk is disposed to continue the use of steel plates for boilers, and if he could be induced to try the product of some of our American steel mills I think he might be convinced that uniformity of texture in a steel plate is attainable and that original lines of weakness need not exist.

C. R. P.

TERRE HAUTE, Ind., July 13, 1882.

### THE SCRAP HEAP.

#### Train Wrecking.

A dispatch from Memphis, Tenn., July 19, says: "An attempt was made to wreck the train due here at 4:30 p. m., on the Louisville & Nashville Railroad, by some wretch, who placed a rail on the track at a point one mile this side of Humboldt. Fortunately the obstruction was thrown from the track without injury to the train other than the cracking of the pump of the engine. This is the second attempt made to wreck trains on this line within the past 30 days, and at or near the same point."

The Nashville *American* of July 20 says: "Some mischievous person placed a rail on the Tennessee & Pacific Division, yesterday morning, near the Murfreesboro Pike. When the engine struck it the rail slid along the track until it was almost cut in two, and this prevented the train from being thrown off the track."

#### An Independent Traveler.

For several days past railroad men on the Buffalo Division (New York, Lake Erie & Western) have been bothering their heads over a strange character whom they have seen running a hand-car all by himself, and behaving in a singular manner. Monday night train 12 was stopped to avoid running over him. Other trains have come close upon him within the past few days before he got his special off the track. Yesterday Officer Mahar found him near Dalton with his car. He was brought to Hornellsville, and now occupies a cell in the lockup, where he was interviewed by a *Times* reporter. He is a young man apparently not over 25 years of age, of medium size, with black hair and eyes and dark complexion. He said that his name was Martin Castel, and that his home was in Omaha, from which place he had come on a first-class passenger car. Somewhere between Hunt's and Dalton he purchased his hand-car of a young man, whose mother ratified the bargain. On being asked what his plan was, he replied that he thought that a nice way to spend the summer would be to travel around by himself on a hand-car. He had intended to move gradually along to New York, gathering stones and weeds by the way, and having a quiet, restful time all by himself. He said he had no idea of this trouble when he started, and now he was willing to trade his hand-car for some property in this town if he could. On being asked if he did not know it was dangerous to travel as he had been doing, he replied that there was no danger at all. "Why," said he, "I never let a train get within half a mile of me unless I happen to meet one on a curve. Then I just lift my car off in two seconds. If I had some chairs in here I would show you how I do it. I am safe if a train gets within half a block of me before I see it, and it is easy to get out of the way if a train is two blocks off." The young man asked the reporter how soon the examination would take place, saying, "I want to get out of this place as soon as possible."—*Hornellsville (N. Y.) Times*.

#### A Fast Freight Run.

The regular stock on the Delaware Division, Gabe Corwin, conductor, with engine 379, Charles Fraser, engineer, and James Sweeney, fireman, made the best freight run with 60 cars yesterday that has been made on the road. The train was run from Deposit to Port Jervis, 90 miles, in 4 hours and 21 minutes, the train never once stopping the whole distance. The engine took water at Lordville and Callicoon, and both water and coal at Lackawaxen. This was accomplished by cutting the engine loose some distance from the station and running the empty engine there with lightning-like speed and taking the water and fuel, by which time the train had caught up and was again coupled on and the journey resumed. This was as fast a run as can be safely made with such a train, and the way in which it was done was indeed novel. Well done, ye of the iron horse.—*Port Jervis (N. Y.) Gazette*, July 24.

#### Electricity Applied to Railroad Trains.

Two British patents have just been issued for mounting dynamo-electric machines upon railroad carriages in such manner that the machines can be set in motion when the train is at a suitable speed and then made to generate electricity which is stored in secondary batteries and applied when required for lighting the train for signal lights and for propulsion where desired.





Published Every Friday.  
CONDUCTED BY  
S. WRIGHT DUNNING AND M. N. FORNEY.

#### EDITORIAL ANNOUNCEMENTS.

**Passes.**—All persons connected with this paper are forbidden to ask for passes under any circumstances, and we will be thankful to have any act of the kind reported to this office.

**Addresses.**—Business letters should be addressed and drafts made payable to THE RAILROAD GAZETTE. Communications for the attention of the Editors should be addressed EDITOR RAILROAD GAZETTE.

**Contributions.**—Subscribers and others will materially assist us in making our news accurate and complete if they will send us early information of events which take place under their observation, such as changes in railroad officers, organizations and changes of companies, the letting, progress and completion of contracts for new works or important improvements of old ones, experiments in the construction of roads and machinery and in their management, particulars as to the business of railroads, and suggestions as to its improvement. Discussions of subjects pertaining to ALL DEPARTMENTS of railroad business by men practically acquainted with them are especially desired. Officers will oblige us by forwarding early copies of notices of meetings, elections, appointments, and especially annual reports, some notice of all of which will be published.

**Advertisements.**—We wish it distinctly understood that we will entertain no proposition to publish anything in this journal for pay, EXCEPT IN THE ADVERTISING COLUMNS. We give in our editorial columns OUR OWN opinions, and those only, and in our news columns present only such matter as we consider interesting and important to our readers. Those who wish to recommend their inventions, machinery, supplies, financial schemes, etc., to our readers can do so fully in our advertising columns, but it is useless to ask us to recommend them editorially, either for money or in consideration of advertising patronage.

#### THE ADVISORY COMMISSION REPORT.

We give a great deal of space this week for the publication in full of the report of Messrs Allen G. Thurman, E. B. Washburne and Thomas M. Cooley on the question submitted by the trunk lines to them for their advice—namely, the differences to be maintained in rates on freight shipped from the West to New York, Philadelphia and Baltimore respectively.

The submission of this question by the four trunk lines interested was something novel in the history of transportation. At times since the completion of the railroad system of Philadelphia and Baltimore, the reduction of rail rates so that part of the Western grain could be carried by rail to the seaboard instead of nearly all going by canal, as theretofore, and the consequent development of an important grain export trade at Philadelphia and Baltimore, New York merchants have complained of the lower rates to these places, and claimed that New York, though more distant from the Western markets, should have as low rail rates. And the railroads that carry chiefly to New York, that is, the New York Central and the Erie, have always desired that the rates should be made as the New York merchants want them. Like the merchants, they would profit most by rates which would bring all the export grain to New York. From time to time they secured reductions of the differences which had prevailed. On coarse freight east the difference was once ten cents per 100 lbs., and this was reduced to five cents. About the end of 1875 it was agreed that the rates should be about in proportion to the distances of the places from Chicago—ten per cent. less to Philadelphia, and thirteen per cent. less to Baltimore than to New York, this being at a time when forty and 50 cents per 100 lbs. were quite common rates on grain. But before this scale of differences was fairly tested the late Commodore Vanderbilt began the famous and disastrous railroad war of 1876, contending that the rates should be as low to New York as to Philadelphia and Baltimore. In no sense could this war be considered a success. Millions of dollars were sacrificed, and probably more than half the loss fell on companies which were indifferent as to the question at issue; and meanwhile the receipts of Philadelphia and Baltimore were not less, but were greater than ever before. At the close it was agreed that thereafter the rates should be 2 cents per 100 lbs. less to Philadelphia and 3 cents to Baltimore than to New

York, the Philadelphia rate corresponding to the difference on a 20 cent rate, and the Baltimore rate to the difference on a 23 cent rate by the scale of rates according to mileage adopted before the railroad war broke out—being really more favorable to New York than that scale, because rates so low were rarely made.

These differences have continued since, and though there were serious wars over the traffic involved in 1878 and 1879, no effort was made to change them; and indeed, no demand for a change in the differences was made in 1881 even, until after the railroad war was begun. Then the New York Central demanded the abolition of the differences as one of the conditions of peace.

This contest lasted about seven months, and cost many millions. When peace was made the question of differences in rates was disposed of by referring it to the Advisory Commission which has just reported, not for arbitration, but for its advice. If any of the companies should refuse to accept its decision their other contracts as to east-bound freight should be void. It is said that at that time Mr. Vanderbilt declared that he would accept any decision which this Commission might make, and that it was the Pennsylvania and the Baltimore & Ohio that refused to be bound by it. As no demand was made to increase the differences, and a change, if any, would have been the reduction or abolition of them, making rates such as there had been no experience with, it is intelligible that the Philadelphia and Baltimore roads should be less willing than the New York roads to accept in advance the decision of the Advisory Commission.

It appears, then, that the question was not submitted to this body until after the New York Central Company had made two long and desperate contests for the purpose of making the rates as the New York merchants wished. Mr. Vanderbilt, in an interview reported in the New York Tribune this week, is represented as saying that the last contest cost the New York Central a million dollars. This is putting it very mildly, however. The actual loss in net earnings was probably nearer \$2,000,000, and this was not more than an eighth of the total loss of all the railroads involved. The railroad war of 1876 lasted longer, and was only less disastrous because there was the less traffic. The New York Central Company has thus shown itself very much in earnest in the matter; and we see no evidence that the merchants and others interested in New York commerce have shown themselves nearly so ready to sacrifice profits to maintain the business of the city. This much may be said for the New York Central. We have not ourselves, after pretty thorough study of the course of traffic, been able to see that New York trade was suffering. It has gone on growing at a marvelous rate ever since the present differences in rates were established; and it would scarcely have occurred to any one that it was suffering were it not for the fact that other cities also, which formerly had little grain export trade, have made important gains. That is, New York no longer has all the trade.

It was suggested at one time during the railroad war that the question of differences be left to the produce exchanges or other commercial organizations of the several seaboard cities. The object of this was to show that the railroads would accept whatever the merchants could agree upon. This would have been very well if the different cities could ever have come to an agreement; this was as likely as that four dogs should agree as to the division of one piece of meat.

Finally the reference to a commission was agreed upon. It having been charged that the railroads neglected the interests of the cities they served, it was decided to select three men, of national reputation, servants of the public and entirely independent of the railroads, and ask them to hear the merchants and others of the several cities, and make a decision in accordance with the public interests. The railroad companies would have nothing to say. They had argued the question and fought it with each other; and had got no credit for their efforts in behalf of the several cities. The merchants might make out the best case they could with the help of the traffic statistics collected by the railroads, and the Commission should decide on the arguments so presented and in accordance with the common public interest.

The result we have in the report now published. We make no boast when we say that there is little of fact or argument in it that is not familiar to readers of the Railroad Gazette. Its significance lies chiefly in this, that three of the ablest men in the country, of judicial minds, entirely independent of the railroads, and endeavoring only to do substantial justice to the whole community, after examining the facts shown by the course of traffic

and hearing the arguments of the merchants of the rival cities and careful study of them, find the question full of difficulty, just as the railroad companies do; they cannot discover precisely whether the cost is greater to one place than to another, and they are pretty well satisfied that the differences could not be determined by the cost alone, which every one who ever worked a railroad has been compelled to learn; and they finally refuse to change the existing differences in rates, while affirming that a change in circumstances may hereafter make a change necessary.

Herein lies the value of the report to the railroad companies. It can hardly fail to convince the community that the question is one not to be settled off-hand by easy deduction from simple fixed principles, but that it is an extremely complex and difficult one, which the best minds and most public-spirited men find must be left to the test of experience, and be decided in different ways, according to circumstances.

#### DEAD-BLOCKS.

The definition of the title of this article in the Car-Builders' Dictionary is, "two blocks of wood or iron, attached either to the end-sill or buffer-beam of a freight-car, and intended to resist the concussion of two cars when they come together after the buffer-springs are compressed. They are placed somewhat above the draw-bar and one on each side of it, with a space of about one or two feet between them. \* \* \* Dead-blocks have probably been so named because so many men have been killed by them. They are also called man-killers."

Neither the latter name, nor the derivation of the first is undeserved. There can be no doubt that scores of men have been killed, and hundreds or thousands maimed by them. The question therefore will naturally be asked: Why are they used? Before attempting to answer this question, it should be said that the danger attending the coupling of cars is very much increased by the fact that the dead-blocks used in some lines are not like those used on others, and that they are often so constructed that it is almost impossible for a man to reach the link or pin while coupling without great danger of having his arm, or other part of his body, crushed when the cars come together.

Naturally this subject has attracted the attention of the Car-Builders' Association, and during the last few

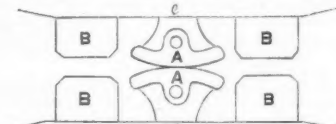


Fig. 1.

years it has been discussed a great deal at its meetings. After the subject was brought up, though, it very soon appeared that the members of the Association and the railroads of the country were very nearly equally divided on the question of the merits and safety afforded by double and single blocks. The advocates of the latter argued that if the double-blocks are properly proportioned, a man between the cars, in coupling them, is no more exposed to danger than he is if single blocks are used, and that the double-blocks have the advantage that they protect the draw-gear from the strains to which it is subjected when single blocks are used. This will be understood from figs. 1

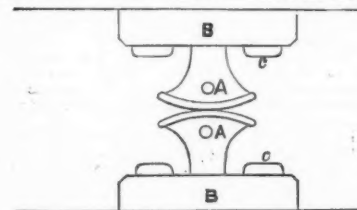


Fig. 2.

and 2. Fig. 1 is a plan showing the double blocks used on the Reading Railroad and Fig. 2 the single blocks of the New York Central cars. From fig. 1 it will be seen that the draw-bar heads A A, project an inch or two beyond the faces of the dead-blocks B B. When two cars come together, with any considerable force, the draw-bars are pushed inward and the draw-springs are compressed until the dead-blocks on the two cars come in contact with each other, after which they must resist the force of the concussion. The draw-bars may be made to extend beyond the dead-blocks a distance just equal to or a little less than the amount of action of the draw-springs, so the latter need never resist any greater force than one just sufficient to compress them. It will be noticed, too, that when the draw-bars are pushed back, so that their heads are flush with the faces of the dead-blocks, there is room enough between



the latter for the coupling-pin. On the other hand, on the New York Central cars, fig. 2, on which single blocks are used, the draw-bar projects enough beyond the dead-block so that after the former is compressed a distance equal to the full action of the draw springs, there will still be room enough for the coupling pins outside of the dead-blocks. It is obvious that with this arrangement the draw-bar and its attachments must resist the whole force of the concussion of the cars when they come together. It is therefore claimed that draw-gear arranged like that shown in fig. 2, with a single dead-block, is much more expensive to maintain than that with double dead-blocks constructed as shown in fig. 1. On the other hand, it is claimed that, in coupling with the latter arrangement, men are in danger of having their arms crushed between the faces of the blocks, whereas, with the New York Central form of construction, these blocks never come together unless the draw-gear is broken down or crushed. It has therefore been urged that the arrangement of the two blocks saves the cars but kills the men, whereas the single blocks save the men but are bad for the cars.

That the double blocks as constructed on some of the roads are very dangerous there can be no doubt. On the cars used on some of the lines in the anthracite coal region of Pennsylvania these blocks are made so deep, measured from the top to the bottom, that it becomes very difficult for the men to reach the coupling link without exposing his arm to the danger of being crushed when the cars come together. If, however, the blocks are not made any deeper than the single ones which are generally used the link can be reached with the arm below the block and the pin from above, provided the blocks are not placed too far apart, as they often are.

When the latter is the case another danger is encountered when cars with double dead-blocks, far apart, come in contact with others having short single blocks. The latter will then go between or interlock with the double blocks in case the draw-gear on either car is broken down. If that should occur when a man is between the cars he is almost certain to be crushed. It is, therefore, important if single blocks are used that they should be so long that they will not go between the double ones, and if the latter are adopted that they should be so near together as not to permit the single ones to interlock with them.

Probably, owing to the fact that about half the freight cars in the country are made with double blocks, and the other half with single ones, it is too late to have either plan abandoned for the other. This was the view taken of the subject at the recent convention of the master car-builders, and consequently neither plan was recommended, but a standard for each was adopted, suited to each other, so that neither would be especially dangerous if used with the other. An engraving of this standard, showing the form and dimensions for double and single blocks, is given on another page.

Whether the double blocks will ultimately supplant the single ones, or *vice versa*, it is now impossible to say. From fig. 2 and from the plan showing the standard in another page it will be seen that both of the single blocks represented are in an incipient state of development into double blocks, however. In fig. 2 there are two plates, *C C*, on each block to receive the blow when the blocks come in contact. In the engraving of the standard it will be seen that the single block is cut away in the middle to a depth of two inches. In both cases these modifications virtually convert the single into double blocks. The essential principle, though, which divides the two systems, is the fact that in the one the draw-bars must resist the whole force of the concussion when the cars come together, and that the blocks never come in contact unless the draw-gear is broken down, and thus there is always room enough for a man's arm between them in coupling, excepting in case of such breakage. In the other system the dead-blocks always come together when the draw springs are compressed to the extent of their full action.

The objections to the double dead-blocks are very much lessened, and the danger from them diminished, if they are not too far apart, so that a man can readily reach from the outside of them to the pin, and if they are not so deep as to prevent reaching the link from below, and also if they are of uniform height and dimensions on all cars.

There can be no doubt then that the danger of coupling cars would be much diminished if the standard recommended by the Car-Builders' Association were adopted by all roads for all new cars, and if the dead-blocks of all cars brought in for repairs were changed to conform to the standard.

It must be admitted, though, that the Car-Builders' Association has only partially done its work, and that

it still remains to adopt a standard draw-gear. Whether this should or should not be an automatic coupler, will remain to be decided in the future.

#### GRAIN MOVEMENT FOR THE HALF-YEAR.

The fluctuations of the grain movement in the first half are usually greater than those in the last half of the year. If the crop is short, there is still usually enough to keep up shipments on a pretty large scale from harvest till new year; but then the shortage is felt with double force in the first half of the following year. Last year the movement kept up well until October. In the three months of July, August and September the receipts of the Northwestern markets were then 84,500,000 bushels, against 95,600,000 in 1880. In the three following months the shortage of the crops was most distinctly felt; the receipts of these markets being but 50,000,000 bushels, against 80,000,000 in 1880. The full effect of the light crops was not felt in the first quarter of this year, because then extraordinarily low rail rates caused the grain to move out of due time—that is, to be forwarded by rail in winter what naturally would have been left till after navigation opened. Consequently we find that in spite of light crops the receipts of the Northwestern markets in the first three months of 1882 were 41,000,000 bushels, against 37,000,000 in the first quarter of 1881; and it is not till the second quarter of this year that we have the large decrease which naturally would have been divided between it and the first quarter. In this quarter ending with June last the Northwestern receipts were but 41,336,000 bushels this year, against 70,230,000 last year. Thus the large decreases were in the last quarter of last year and in the second quarter of this year. The effect of the light corn crops will be felt doubtless all the rest of this year.

The receipts of the Atlantic ports represent the decrease of the crops better than the Northwestern receipts. It is the surplus of the crops that is exported, and the exports go to the Atlantic ports. The Northwestern crops this year were mostly needed at home, and the receipts of the Northwestern markets were distributed all over the country to an unprecedented extent, leaving little for the seaboard. The receipts at the Atlantic ports in the several quarters of the year ending with June this year and last have been:

	1881-82.	1880-81.	Decrease.	P. C.
June-Sept.	73,900,000	106,100,000	32,200,000	30.3
Sept.-Dec.	41,900,000	73,680,000	31,780,000	43.1
Jan.-March	21,800,000	36,200,000	14,400,000	40.0
April-June	29,300,000	74,000,000	44,700,000	60.4

Here we find a great decrease in the June-September quarter, which there was not in the Northwestern receipts; also a decrease of 40 per cent. in the first quarter of this year, when there was an increase in Northwestern receipts; but they agree in showing a large decrease in the last quarter. For the whole year the decrease is no less than 123,000,000 bushels, or 42 per cent., while the decrease in Northwestern shipments was but 66,000,000 bushels, or 23½ per cent.

We set out, however, to review the grain movement for the half-year. There has been so great a change since 1879 in the quantity of wheat ground, that we have, in the table below, reduced wheat to flour (4½ bushels to the barrel) and included it with the grain. The figures show the receipts and shipments at the eight Northwestern markets (St. Louis, Peoria, Chicago, Milwaukee, Duluth, Detroit, Toledo and Cleveland), and the receipts at the seven Atlantic ports in the six months from January to June, inclusive, for the last eight years:

	Grain Movement, Six Months ending with June.		
Year.	Northwestern receipts.	Northwestern shipments.	Atlantic receipts.
1875	68,360,201	54,756,885	72,626,451
1876	87,169,534	78,880,262	97,976,575
1877	64,493,384	54,581,412	70,558,492
1878	103,598,438	83,083,277	126,362,810
1879	111,819,752	89,205,107	142,688,403
1880	134,620,023	116,214,144	152,655,913
1881	139,878,732	113,563,425	141,585,067
1882	101,960,693	85,894,558	77,824,833

There was a poor crop (of wheat especially) in 1876, which is reflected in the light movement of the first half of 1877. For the four following years crops were good. We see a great increase in 1878, amounting to 60 per cent. in Northwestern and 80 per cent. in Atlantic receipts. And there was a continued increase in Northwestern receipts from that time till this year, when we have a sudden and great decrease amounting to 37,900,000 bushels (27 per cent.) in Northwestern receipts, to 27,700,000 (24½ per cent.) in Northwestern shipments, and to 63,800,000 (41½ per cent.) in Atlantic receipts, and making the movement as a whole the smallest since 1877, when this half year was the period of the lowest condition of railroad and probably of general business, while the Atlantic receipts this year are 20,000,000 bushels less than in 1876 and nearly as small as in 1875 and 1877.

The distribution of the receipts (grain, but not

flour) among the several Northwestern markets was as follows:

	1880.	1881.	1882.
Chicago	54,515,803	46,792,530	36,350,504
Milwaukee	7,527,492	8,083,808	7,775,550
Toledo	14,327,457	11,696,850	6,319,896
Detroit	3,875,749	3,601,996	3,154,026
Cleveland	2,328,801	2,288,736	1,490,429
St. Louis	21,797,383	21,336,216	15,780,249
Peoria	10,885,165	13,111,830	11,024,130
Duluth	1,021,542	165,034	571,975
Total	116,270,392	107,037,000	82,306,849

There is a decrease of 24,670,000 bushels from last year, of which 10,442,000 is at Chicago, 5,556,000 at St. Louis, 5,477,000 at Toledo and 2,088,000 at Peoria.

The percentage of the total at each place was:

	1880.	1881.	1882.
Chicago	46.9	43.7	44.1
Milwaukee	6.5	7.5	9.4
Toledo	12.3	10.9	7.6
Detroit	3.3	3.4	3.8
Cleveland	2.0	2.0	2.1
St. Louis	18.7	20.0	19.2
Peoria	9.4	12.2	13.2
Duluth	0.9	0.2	0.7

The most notable changes in percentages are the increase at Milwaukee and the decrease at Toledo.

The decrease in the grain receipts at Atlantic ports is much more marked than that in the grain and flour receipts, the decrease in flour having been comparatively small. For nine successive years these receipts of grain alone in the first half of the year have been, in bushels:

Year.	Bushels.	Year.	Bushels.
1874	67,627,697	1879	115,927,223
1875	52,380,434	1880	124,068,455
1876	77,834,922	1881	110,208,873
1877	56,004,345	1882	51,139,115
1878	107,930,455		

Thus, taking grain alone, the receipts at Atlantic ports in the first half of the year have been smaller this year than in any previous year since 1873 at least, and not half as great as in either of the four years next preceding.

The percentage of the total received at each port for seven successive years has been:

	1876.	1877.	1878.	1879.	1880.	1881.	1882.
New York	39.4	35.5	45.5	41.0	43.3	44.7	56.1
Boston	7.8	10.2	7.8	8.2	8.4	10.5	13.3
Portland	1.9	1.3	1.3	0.8	1.3	1.0	1.9
Montreal	5.7	4.8	3.5	3.2	3.5	3.8	4.5
Philadelphia	20.6	14.8	18.3	19.9	18.0	11.2	10.2
Baltimore	20.0	25.4	16.6	21.0	17.0	17.0	7.4
New Orleans	4.6	8.0	7.0	5.9	8.5	10.6	6.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

These figures have a special interest in connection with the report of the Advisory Commission on the differences in rates to New York, Philadelphia and Baltimore, which we publish this week. This Commission reports that it does not find that New York has been losing its business to Philadelphia and Baltimore. It gives the figures for the distribution of flour and grain since 1877. Including flour makes the figures more favorable to New York. The competition for the flour trade is confined chiefly to New York and Boston, and it is only for grain that the competition is active and general. Of this, the percentages of New York and those of Philadelphia and Baltimore together have been:

	1876.	1877.	1878.	1879.	1880.	1881.	1882.
New York	39.4	35.5	45.5	41.0	43.3	44.7	56.1
Phila. & Balt.	40.6	40.2	34.9	40.9	35.0	29.1	17.6

Certainly the Commission was right in saying that Philadelphia and Baltimore have not been taking New York business recently, and it would have appeared more clearly if they had quoted the figures of 1876 and 1877. In the first half of those years Philadelphia and Baltimore received more than New York, which they have never done since. In 1880 New York received nearly a quarter more than the two together, in 1881, one-half more, this year more than three times as much. Differences were generally maintained as agreed in 1880; but during the railroad war of 1881 we cannot be sure that they were, or early in this year, and the overwhelming change lately in favor of New York may be said to have been due to an abolition or reduction of the differences. In the last three months, however, the agreed differences are known to have been strictly maintained, and in those months the percentage of receipts at each point was:

	New York.	Boston.	Portland.	Montreal.	Phila.	Balt.	N Orleans.
	60.9	9.3	0.9	7.2	9.8	6.6	5.3

Thus Philadelphia and Baltimore in these three months when differences were maintained carried but 16.4 per cent. of the grain, against New York's 60.9 per cent., which is sufficient evidence that New York's business is not necessarily diverted by the differences in rates. The fact is that there are many other influences at work, and these for a year past have been especially unfavorable to Philadelphia and Baltimore. One of these influences, and probably the principal one, was the failure of both corn and wheat crops in Ohio valley, which is served mostly by the roads which carry chiefly to Philadelphia and Baltimore. This very district has this year an extraordinarily good crop of wheat, and we may expect to see the effect of it very soon both in the amount and in the proportion of the Baltimore and Philadelphia receipts—first at Baltimore and later at Philadelphia.

For we must not expect that New York will maintain the extraordinarily favorable position which it







tons in the previous week of this year. The gain over the previous week in grain is 2,704 tons, or 46 per cent. Last year in this week the shipments were, 9,091 tons of flour and 26,139 of grain, against 1,359 tons of flour and 8,536 of grain this year. And, while there was this decrease of 25,345 tons (72 per cent.) in grain and flour, the decrease in provisions was but 1,795 tons, or 18½ per cent. Fully one-half of the grain last year was taken from the lake vessels by the low rail rate, as may be judged from the fact that, while the total grain shipments were 24,006 tons less this year, the lake shipments were but 7,103 tons less. The rail business now, though not large, is profitable. Last year it was very large, and entirely unprofitable; in 1880 much larger than now, and larger than it is likely to become this year, and much more profitable than now, not only because of higher rates, but also because of lower expenses.

POOR'S MANUAL FOR 1892, which is the fifteenth annual issue, makes a volume of just 1,001 pages, besides the advertisements. There is no change in the general plan, and it continues to be the indispensable reportorium of condensed annual reports for a series of years, which is so much more convenient than the annual reports themselves that we anxiously await its appearance, though with a pretty complete file of the latest reports close at hand. The consolidated statistics for the whole United States, given in the introduction, we have already published. These are the only statistics we have of the railroad system of the United States taken as a whole, and, as such, are of great value. It is much to be desired, however, that these statistics should be somewhat more extended, and especially that they should be explained. There is reason to believe that not all the items are given for the whole mileage, but that some roads, while reporting mileage, do not report second track and sidings, or cars, or some other of the items given under the column heads. For this reason the mileage for which each item is given should be given with the item. The error of \$3,000,000,000 in the "capital and funded debt," which we pointed out as occurring in the advance sheets of the introduction, is continued in the published volume. Some of the statements of the introduction we have already criticised, and some others we hope to speak of hereafter. The author prophesies that the railroad mileage of the United States in 1890 "will probably largely exceed" 200,000 miles. Even with a rate of growth equal to that from 1870 to 1880 (possible only if immigration continues extraordinary throughout the decade), 200,000 miles even would give us a mile of railroad for every 325 people to support, against 1 to 535 in 1880 and one to 486 to-day. And if we continue building railroad at the same rate through the next decade, we shall have in 1900 about 425,000 miles for a population of 85,000,000, or just 200 people per mile; and it will keep them busy to support the roads. At present there is here about one-seventh of the number of people per mile of railroad that there is in Europe, and we doubt very much whether a reduction of the number to 325 will be practicable, and whether we can afford to put \$400 of capital into new railroads for every addition of a man, woman or child to the population until 1890. It would be too much of a good thing.

LAKE RATES, in the four or five weeks since we considered them last, have fallen to the bottom and risen a little above the figures last quoted. In the first few days of July cargoes were taken at half a cent a bushel from Chicago to Buffalo, and not half the vessels could get cargoes even on those terms. Afterwards the vessel-owners apparently determined to tie up rather than accept such rates, and most of them must have tied up, for the few cargoes shipped generally commanded 1½ cents for corn; for a few days shipments have been larger, including some new wheat, and rates this week are quoted at 2 cents for corn and 2½ for wheat. Shipments are still very light and three times as much per week has often been taken by the lake vessels.

Canal rates have remained almost unchanged all this time, and quotations now are 3½ cents per bushel for corn, and 4¼ for wheat from Buffalo to New York.

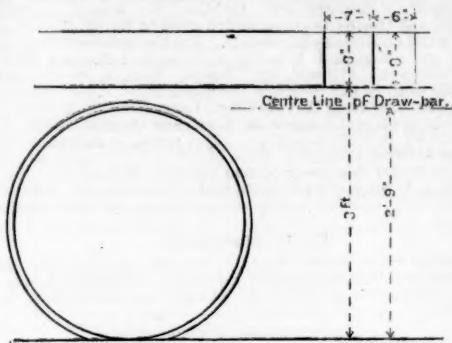
Ocean rates have continued to advance, and are now 6d. per bushel by steam from New York to Liverpool, when they were but 3d. about a month ago, and a few weeks earlier were ½d. to 1d. Thus within two months, while the price of corn in Chicago has fallen from about \$1.30 to \$1.03, the cost of carrying it from New York to Liverpool has advanced from 2 cents to 12 cents. The present rate, however, is not a very high one. The other was possible only when a great many steamers arriving with passengers needed grain to serve as ballast on the return voyage, and the exports were very light.

THE CHICAGO APPORTIONMENT was the subject of argument before the Arbitrator, Mr. Adams, last Tuesday. The appeal was made, we understand, by the Grand Trunk Company.

#### Standard Dead-Blocks.

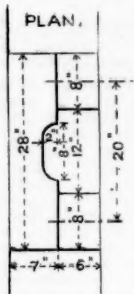
The report, published in the *Railroad Gazette* of July 14, of the discussion of this subject at the late convention of the Master Car-Builders' Association, contained an abstract of the discussion and action on the second day only. Before the next session was opened the following day it was discovered that there were some discrepancies in the dimensions adopted, so that the previous action was then reconsidered, and the dimensions indicated in the engravings herewith were recommended as the standard for single and double dead-blocks for cars. The double blocks are 8 x 8 in. face by 8 in. thick and 20 in. from centre to centre. The single block is 8 in. deep by 7 in. thick by 28 in. long, and

cut out in the middle as indicated in the engraving. Both single and double blocks are 3 ft. high measured from the



#### Standard Single and Double Dead Blocks

Recommended at the Convention of the Master Car-Builders Association in Philadelphia, June 1892



top of rail to their under sides. These dimensions are now the standard recommended by the Master Car-Builders' Association.

### General Railroad News.

#### MEETINGS AND ANNOUNCEMENTS.

##### Meetings.

Meetings will be held as follows:  
*Cincinnati, Hamilton & Dayton*, special meeting, in Cincinnati, Aug. 16, to vote on the question of issuing \$1,000,000 preferred stock.  
*Memphis & Charleston*, adjourned special meeting, at Huntsville, Ala., Aug. 22.

##### Railroad Conventions.

The *Traveling & Passenger Agents' Association* will hold its annual convention in Montreal, Aug. 9.  
The *National Association of General Passenger & Ticket Agents* will hold its next meeting, pursuant to adjournment, in Montreal, Sept. 19.  
The *Master Car-Painters' Association* will hold its annual convention in Chicago, beginning Sept. 20.

##### Dividends.

Dividends have been declared as follows:  
*Oregon Railway and Navigation Co.*, 2 per cent., quarterly, payable Aug. 1. Transfer books closed July 22.  
*Fulman's Palace Car Co.*, 2 per cent., quarterly, payable Aug. 15. Transfer books close Aug. 1.  
*Terre Haute & Indianapolis*, 4 per cent., semi-annual, payable Aug. 1, at the office of the Treasurer in Terre Haute, Ind., to Western stockholders; at the office of the Farmers' Loan & Trust Co., No. 26 Exchange Place, New York, to Eastern stockholders.  
*Marquette, Houghton & Ontonagon*, 4 per cent., semi-annual, on the preferred stock, payable Aug. 15. Transfer books close July 26.  
*Cedar Rapids & Missouri River* (leased to Chicago & Northwestern), 3½ per cent. on the preferred stock and 1½ per cent. on common stock, payable Aug. 1.  
*Central Pacific*, 3 per cent., semi-annual, payable Aug. 1.  
*Connecticut & Passumpsic Rivers*, 3 per cent., semi-annual, payable Aug. 1.

##### Mail Service Extensions.

Mail service is ordered over new railroad lines as follows:  
*Pensacola & Atlantic*, service ordered between Pensacola, Fla., and Milton, 20 miles, to begin Aug. 21; six times a week, or as often as trains may run.

##### Joint Executive Committee Meeting.

The Joint Executive Committee met at Commissioner Fink's office in New York, July 26. The principal business to be considered at this meeting was the refusal of the Chicago roads to accept the Committee's award, upon which, however, the Committee had no action to take except to refer the matter to the Arbitrator, who will proceed at once to hear arguments, and the request of the Vandalia line for an increased allotment in the St. Louis live-stock pool. This was considered at the first day's meeting, but no action had been taken when the Committee adjourned over until next day.

Some minor questions as to the Indianapolis, Cincinnati and Cairo pools were also to be discussed.

##### American Ticket Brokers' Association.

The annual convention of this Association was held at the Hotel Brunswick in Boston, July 19, President Gustav G. Lansing in the chair, with a good attendance of members.

The report of the President dealt largely with the position the Association stands in with regard to the railroad corporations and the public. He referred to the efforts that had been made in several legislatures to destroy the business of ticket brokerage and directed the attention of those present to several matters on which they would be called to pass judgment, notably several by-laws passed at the special meeting of the Executive Committee, held in Louisville, the adoption of a telegraph cypher and the question of incorporation. A searching investigation into the character and standing of applicants for admission to membership was strongly presented. It was urged that adjustment of differences with patrons should be made with a liberal hand. There should be no hesitation to grant full and satisfactory redress, and thus prove the truth of the society's motto, "Our protection travels with you." Attention was drawn to the part the Association plays in nurturing and sustaining competition, and he commended to notice the fact that it is admitted that passage ticket brokerage is one of the greatest obstacles to uninterrupted continuation of the

various pools. The President, while hesitating to introduce the subject of politics, said: "It certainly behooves us to look to our friends to assist in depriving any candidate of support who is known to be adverse to our interests. When such interests are jeopardized the right of the people to enjoy a healthy competition in passage rates is usurped or destroyed."

The Secretary and General Manager, Mr. H. C. Meader, of Louisville, and the Treasurer, Mr. E. A. Mulford of Chicago, presented their annual reports from which the following statistics are gleaned: Total membership Aug. 1, 1881, 81; losses by expulsion and withdrawal, 22; new accessions, 38; making present membership, 97; applications rejected, 15; applications now pending, 8. Balance on hand Aug. 1, 1881, \$179.14; receipts from all sources, \$3,406.35; total, \$3,585.49; disbursements, \$2,806.40; leaving balance in the treasury, \$779.09.

On the second day officers for the ensuing year were elected. Votes of thanks were then passed to Messrs. Barnes and Dunkel of the Hotel Brunswick, and to the general passenger agents of the Providence & Stonington Steamboat Company, for courtesies received. George M. McKenzie delivered the annual address, in which he impressed upon his hearers the necessity for close application and untiring effort in everything they undertook, whether it relates to morals, finances, or physical culture, and said that this alone would bring advancement. Success in the acquisition of money, however, is not desirable except as it can be used as a stepping stone to eminence in other departments of life. Mrs. Harriet Webb, of New York, entertained the convention with reading and recitations, and music and a banquet followed. In the evening the delegates enjoyed a sail down the harbor, spending a short time at Nantasket.

#### ELECTIONS AND APPOINTMENTS.

*American Ticket Brokers' Association.*—At the annual convention in Boston, July 20, the following officers were chosen: President, George McKenzie, St. Louis; Vice-Presidents, A. M. Barnard, Buffalo; Wm. E. Sheldon, Boston; Thomas O'Brien, Cleveland, and W. W. Crawford, Richmond, Va.; Secretary and General Manager, H. C. Meader, Louisville; Treasurer, F. Mauget, St. Louis; Executive Committee, J. J. Walker, Chicago; John G. Webb, New York, and T. T. Lindenberger, Detroit; Auditing Committee, B. C. Wood, Columbus, O.; S. Steiner, St. Louis, and W. H. Riley, Binghamton, N. Y.; Arbitration Committee, F. J. Ansdan, George Seefeld, Rochester, N. Y., and W. L. Leonard, Mansfield, Ohio.

*Associated Railroads of Virginia and the Carolinas.*—The following appointments have been made, the officers named being all under the control of Mr. Sol. Haas, Traffic Manager:

Mr. Mercer Slaughter, General Passenger Agent of the Richmond & Danville and leased lines, with office at Richmond, Va. Mr. F. T. Hawks succeeds Mr. Slaughter as Assistant General Freight and Passenger Agent, in charge of the Virginia Midland, with office in Alexandria, Va.

Mr. J. H. Drake, Acting General Freight Agent of the Richmond & Danville and leased lines, with office in Richmond.

Mr. T. M. Emerson, General Freight and Passenger Agent of the Coast Line, including the Wilmington & Weldon, the Wilmington, Columbia & Augusta, the Northeastern (South Carolina), the Petersburg Railroad, and their branches.

*Bradford & Tiona.*—Mr. Alonzo J. Wilcox, of Bradford, Pa., is President of this new company.

*Catskill Mountain.*—Mr. Charles A. Beach is Superintendent, with office in Catskill, N. Y.

*Central Pacific.*—At the annual meeting in San Francisco, July 26, the following directors were chosen: Charles Crocker, C. F. Crocker, E. W. Hopkins, C. F. Huntington, W. V. Huntington, E. H. Miller, Jr., Leland Stanford. The board re-elected Leland Stanford President; C. F. Huntington, First Vice-President; Charles Crocker, Second Vice-President; E. H. Miller, Jr., Secretary; E. W. Hopkins, Treasurer.

*Chattahoochee.*—At the annual meeting in Ashland, Ky., July 14, the following directors were chosen: Jay H. Northrup, Louisa, Ky.; George S. Richardson, Ashland, Ky.; G. W. Carlisle, W. A. Goodman, George T. Stedman, Cincinnati; James C. Holden, George C. Wood, New York. The board elected George T. Stedman President; George S. Richardson, Vice-President; C. H. Rockwell, General Manager; George W. Carlisle, Secretary and Treasurer.

*Chesapeake & Ohio.*—Mr. A. H. Wood is appointed Assistant General Superintendent in charge of the train and station service, to whom the division superintendents will report, and from whom they will receive instructions.

Mr. Don A. Sweet is appointed Assistant to the General Manager, vice A. H. Wood, transferred.

These appointments take effect Aug. 1. Headquarters, Richmond, Va.

Of the new officers the *Richmond State* says: "Mr. Wood came to the Chesapeake & Ohio Jan. 1 last as Assistant to the General Manager. He began his railroad career in Massachusetts, but removed to the West, where he accepted a position on the Little Miami road. After filling responsible offices on various lines he became Superintendent of the Chicago Division of the Wabash, St. Louis & Pacific, which position he resigned to accept a place on the great east and west trunk line of the future—the Chesapeake & Ohio."

"Mr. Sweet, who succeeds Mr. Wood as Assistant to the General Manager, is one of the most experienced railroad officials in the country. Beginning on the Chicago, Burlington & Quincy in 1863—then a youth—he has had a thorough schooling in nearly every department of railroad services. He is an accomplished telegrapher and transportation man. He was General Freight and Ticket Agent of the Chicago & Alton road five years (this must be a mistake); was Ticket Agent in the Union Depot in Chicago two years; was Private Secretary to C. W. Smith, when that gentleman was Traffic Manager of the Chicago, Burlington & Quincy; was also his Private Secretary on the Erie road, and came with Mr. Smith to the Chesapeake & Ohio in May, 1881."

*Farmville & Staunton River.*—This company has been organized by the election of the following directors: W. F. Dunnington, J. P. Fitzgerald, B. S. Hooper, A. R. Venable, C. M. Walker, J. L. White, Farmville, Va.; J. D. Davis, J. W. Eggleston, W. R. Green, M. M. Martin, Charlotte Court House, Va.; Joseph B. Eggleston, Hampden-Sidney College, Va. The board elected A. R. Venable, President; R. C. McKinney, Secretary and Treasurer.

*Garfield & Tionesta.*—Mr. Ashael N. Cole, of Wellsville, N. Y., is President of this company.

*Louisville & Nashville.*—Mr. John W. Mass has been appointed Assistant General Passenger Agent, with office in St. Louis. He was formerly on the old St. Louis & South-eastern, and recently on the Atlantic & Pacific.

*Massachusetts Central.*—The following new directors have been chosen: Moses W. Richardson, Elisha S. Converse,



Henry Woods. They replace Franklin Bonney, Wm. A. Dickinson and Charles A. Cotting. The only old directors now left are J. Edwin Smith, Henry F. Hills and Lewis J. Dudley.

**New York & New England.**—Messrs. E. M. Kenyon, G. B. Fairbanks and R. B. Donaldson have been appointed Train Dispatchers. All train orders and instructions signed by them will be respected by trainmen.

**Pittsburgh, Chartiers & Youghiogheny.**—Mr. Jos. Ramsey, Jr., is General Manager, with office at No. 70 Fourth avenue, Pittsburgh, Pa.

**Rutland.**—At the annual meeting in Rutland, Vt., July 26, the following directors were chosen: Jacob Edwards, James W. Hickock, Edward T. Mosely, John B. Page, C. A. Prichard, W. J. Robinson, John Trout, James H. Williams, Henry M. Whitney. The board re-elected John B. Page President; J. M. Haven, Secretary and Treasurer. The road is worked by the Central Vermont Company.

**Tionesta & Clarion.**—Mr. J. W. Jones, of Philadelphia, is President of this new company. Mr. Jones is also President of the Buffalo, Pittsburgh & Western.

**Toledo, Cleveland & Pittsburgh.**—The officers are: President, Chauncey H. Andrews; Secretary, Mason Evans; Treasurer, Henry G. Garlick. Office at Youngstown, Ohio.

**Vermont & Boston Telegraph.**—This company has elected Norvin Green President; R. H. Rochester, Secretary and Treasurer.

**Wisconsin Freight Agents' Association.**—At a meeting held in Milwaukee, July 18, the following officers were chosen for the ensuing year: President, H. Whitcomb; Vice-President, W. H. Truesdale; Secretary, Louis Blankenhorn; Treasurer, C. A. Knapp; Classification Committee, C. H. Knapp, P. H. Malone, W. H. Wright.

#### PERSONAL.

—It is reported that Mr. George Olds has resigned his position as General Freight Agent of the Chicago, Milwaukee & St. Paul road.

—Mr. Wm. B. Strong, President of the Atchison, Topeka & Santa Fe Company, has been for some time dangerously ill, but is now slowly improving in health.

—Mr. Robert Briggs, a well-known civil and mechanical engineer of Philadelphia, died at his mother's residence in Dedham, Mass., July 24, after a lingering and painful illness. Mr. Briggs was born in Boston, May 18, 1822, and was educated in the Boston schools, pursuing his professional studies under Captain Alexander Parris, an engineer and architect of Boston. He spent much of his life in Washington and Philadelphia. He was employed as engineer under General Meigs in the extension of the national Capitol and in the construction of the Washington aqueduct. He was afterwards superintendent of the Morris & Tasker Iron Works at Philadelphia, and subsequently associated with Henry G. Morris in the Southwark Foundry. The large pumping engine of the Lowell water-works was built under his direction. Of late years he has been employed as a consulting civil engineer, and, up to the time of his last illness, he held that position in the United States engineer's office in Philadelphia. Mr. Briggs was for a time the editor of the *Journal of the Franklin Institute*, and was a member of several associations of architects and engineers in this country. He had also the honor of being elected, some years ago, a member of both the institutions of civil engineers and of mechanical engineers in London.

#### TRAFFIC AND EARNINGS.

##### Railroad Earnings.

Earnings for various periods are reported as follows:

Six months ending June 30:	1882.	1881.	Inc. or Dec.	P. c.
Ala. Gt. Southern.....	\$362,546	\$346,848	I. \$15,698	4.5
Buff., Pitts. & West.....	383,156	297,066	I. 86,090	29.0
Net earnings.....	203,149	88,239	I. 114,910	130.0
Chi. & West Mich.....	719,236	596,339	I. 122,897	20.6
Flint & Pere Marq.....	1,047,152	904,666	I. 142,486	15.6
Mar., Houghton & Ont.....	483,184	272,234	I. 210,950	77.5
Nash., Chatta. & St. L.....	886,745	1,079,242	D. 192,497	17.7
Net earnings.....	3,814,939	433,903	D. 3,381,036	13.4
Norfolk & Western.....	1,024,959	995,129	I. 29,830	3.0
Net earnings.....	404,460	435,972	D. 31,512	7.2
Northern Central.....	2,651,671	2,661,868	D. 10,197	0.4
Net earnings.....	877,231	1,040,462	D. 163,231	15.7
Pennsylvania.....	22,650,853	21,553,842	I. 1,097,011	5.0
Net earnings.....	8,189,919	8,996,949	D. 807,030	9.0
Phil. & Reading.....	9,511,496	9,137,089	I. 374,407	4.3
Net earnings.....	3,814,939	3,802,820	I. 12,119	0.3
Richmond & Danville.....	1,666,096	1,507,935	I. 158,161	4.3
Vicksburg & Mer.....	218,392	.....	.....	.....
Virginia Midland.....	611,574	560,634	I. 50,940	9.1
Five months ending May 30:				
Chi., Bur. & Quincy.....	\$7,718,451	\$7,014,745	I. \$703,706	10.0
Net earnings.....	3,374,389	3,036,929	I. 337,460	11.1
Minn. & St. L.....	549,908	333,196	I. 216,712	65.1
Southern Pac., No. Div.....	411,149	.....	.....	.....
Month of May:				
Chi., Bur. & Quincy.....	\$1,505,261	\$1,679,455	D. \$174,194	10.4
Net earnings.....	647,767	753,702	D. 105,935	14.0
Minn. & St. L.....	104,307	97,115	I. 7,192	7.4
Southern Pac., No. Div.....	104,864	.....	.....	.....
Month of June:				
Ala. Gt. So.....	\$54,466	\$51,791	I. \$2,675	5.3
Buff., Pitts. & West.....	75,194	53,163	I. 22,031	41.6
Net earnings.....	39,812	16,698	I. 23,114	138.4
Chi. & West Mich.....	116,136	114,270	I. 1,866	1.6
Flint & Pere Marq.....	159,740	160,590	D. 850	0.5
Marq., Hought. & Ont.....	139,000	139,688	D. 688	0.5
Nash., Chatta. & St. L.....	119,074	154,549	D. 35,475	29.8
Net earnings.....	44,247	73,907	D. 29,660	67.1
Norfolk & Western.....	174,843	156,888	I. 17,955	11.4
Net earnings.....	72,853	61,372	I. 11,481	18.7
Northern Central.....	482,762	487,287	D. 4,525	0.9
Net earnings.....	173,453	181,691	D. 8,238	4.5
Pennsylvania.....	4,093,757	3,807,438	I. 286,319	7.5
Net earnings.....	1,534,326	1,488,536	I. 45,790	3.1
Phil. & Reading.....	1,714,730	1,707,296	I. 7,434	0.4
Net earnings.....	773,397	708,469	I. 64,928	9.2
Richmond & Danville.....	226,082	225,585	I. 497	0.2
Vicksburg & Mer.....	26,817	23,708	I. 3,109	13.1
Virginia Mid.....	125,588	98,707	I. 26,881	30.2
Second week in June:				
Chi. & Eastern Ill.....	\$33,308	\$31,286	I. \$2,022	6.5
Chi. & Gt. Trk.....	34,329	25,647	I. 8,682	33.9
Chi., Mil. & St. P.....	331,000	360,968	D. 29,968	8.3
Mo. Pacific Lines.....	540,900	500,940	I. 39,960	7.9
Third week in June:				
Denver & R. G.....	\$113,929	\$124,990	D. \$11,061	8.9
No. Pacific.....	102,890	91,760	I. 11,130	12.1
St. L. & San Fran.....	82,200	57,000	I. 25,200	35.9

##### Passenger Commissions.

At a meeting of general passenger agents of the roads leading west from Chicago and St. Louis in Chicago last week, after a long discussion the following resolution was unanimously adopted:

"Resolved, That for the month of July, 1889, the commission on east-bound business from Kansas City, Leavenworth, Atchison, St. Joseph, Council Bluffs, and Omaha to

Chicago shall be \$3. From Kansas City, Leavenworth, Atchison, and St. Joseph to St. Louis \$1, and from St. Louis to Chicago \$1. On west-bound business from Chicago to Kansas City, Leavenworth, Atchison, St. Joseph, Council Bluffs, and Omaha the commission shall be \$3 on first-class and \$2.50 on second-class tickets. For the month of August, 1889, the commission between Chicago and Kansas City, Leavenworth, Atchison, St. Joseph, Council Bluffs, and Omaha shall be \$2; between Chicago and St. Louis, \$1; between St. Louis and Kansas City, Leavenworth, Atchison, St. Joseph \$1, and between St. Louis and Council Bluffs or Omaha \$2, in both directions. The rates to intermediate points between Chicago and the Missouri River shall in no case be higher than those named above. The above commissions do not apply to tickets sold in Chicago, St. Louis or Kansas City, as those points are governed by local agreements.

##### Grain Movement.

For the week ending July 15 receipts and shipments of grain of all kinds at the eight reporting Northwestern markets and receipts at the seven Atlantic ports have been, in bushels, for the past six years:

Year.	Northwestern receipts.	Total.	By rail.	P. c. by rail.	Atlantic receipts.
1877.....	4,158,585	3,233,327	583,147	18.0	2,293,369
1878.....	4,330,960	3,095,508	1,347,394	43.5	3,412,025
1879.....	4,379,964	3,961,338	1,451,023	36.6	5,842,188
1880.....	5,788,152	5,383,749	1,137,290	21.1	7,954,221
1881.....	5,105,048	5,302,218	2,380,333	45.0	5,746,634
1882.....	3,333,220	2,434,888	939,178	40.6	2,263,410

The movement in the Northwest shows a great improvement over the previous week, which was the worst on record at this time of year, the nearest approach to it being the first week of July in 1877, when also the end of a light crop was being marketed, and a good winter wheat crop was assured. Compared with the first week of July the receipts of the Northwestern markets for the week ending July 15 show an increase of 24 per cent., and with one exception they are the largest since May, and with six exceptions the largest since February. That the increase is largely due to the new winter wheat crop is indicated by the fact that wheat forms a much larger proportion of the whole than heretofore, and that it was received chiefly at St. Louis, which is nearest the country where the early harvest has permitted threshing. The wheat receipts of the week this year were exceeded only in 1880 and 1879, but the corn receipts remain much smaller than for many previous years.

The shipments of these markets, though much smaller than in many previous years since 1874, are 498,000 bushels more than the week before, but with that and two other exceptions are the smallest since navigation opened. Shipments down the Mississippi were almost nothing, and for the last four weeks they have been but 36,275 bushels. In the corresponding four weeks of last year they were 1,249,583 bushels—a falling off of 97 per cent. The rail shipments were a larger proportion of the whole than in any previous corresponding week except in 1881 and 1878—times of railroad war, excessively low and wholly unprofitable rates. Still the gross receipts of grain by rail were about one-third more last year than now, the rail shipment being 2½ times as great. The rail shipments were but 13 per cent. less than in 1880, however, when the business was the most profitable and rates were a fifth higher than now.

The receipts at the Atlantic ports this year were smaller than in any corresponding week recorded (since 1873), and were 60 per cent. less than those of last year, and 72 per cent. less than those of 1880. They were 11 per cent. greater than the week before, but with that and one other exception were the smallest since April. An increase of the movement in the Northwest will not be much felt at the seaboard for about two weeks.

Of the Northwestern receipts for the week Chicago had 48.8 per cent., St. Louis 30.2, Milwaukee 7.9, Peoria 5.6, Toledo 3.1, Cleveland 2.4, Detroit 1.5, and Duluth 0.5 per cent. compared with the previous week the receipts of St. Louis increased 102½ per cent., those of Chicago 112 per cent.

Of the Atlantic receipts for the week New York had 56.8 per cent., Montreal 14.1, Boston 11.3, Baltimore 10.7, Philadelphia 4.7, New Orleans 1.9, and Portland 0.5 per cent. The proportion received at Montreal is unusually large. In the last two weeks it has received 13½ per cent. of the whole, against 4½ per cent. in the month of June this year, and less than 7 per cent. during its season of open navigation last year.

Exports from Atlantic ports for the week ending July 19, were 1,692,266 bushels of grain and 67,200 barrels of flour this year, against 4,408,079 bushels of grain and 75,795 barrels of flour in the corresponding week of last year. The grain exports are the largest for many months.

For the week ending July 22 receipts and shipments at Chicago and Milwaukee were:

	1882.	1881.	1882.	1881.
Chicago.....	2,670,109	2,746,368	2,262,010	3,102,217
Milwaukee.....	221,555	286,005	171,446	341,313
Both.....	2,891,664	3,032,373	2,433,456	3,443,530

The receipts, it will be seen, are nearly as great this year as last. The shipments were 31 per cent. less this year.

Receipts and shipments at Buffalo for this week ending July 22 were:

	1882.	1881.	1882.	1881.
By rail.....	372,600	1,278,100	470,100	2,72,200
By water.....	1,003,600	2,066,500	106,990	1,260,350
Total.....	1,376,200	3,344,600	577,090	3,432,550

There is a decrease of 71 per cent. in the rail receipts and of 53 per cent. in the lake receipts; a decrease of 79 per cent. in the rail shipments and of 84 per cent. in the canal shipments. The canal shipments are a smaller proportion of the whole than last year, though the boats have only to compete with a rail rate of about 0.52 cent per ton per mile, instead of the 0.31 cents charged last year.

For this week ending July 22, receipts at four Eastern points have been for three years:

	1882.	1881.	1880.	Total.
Bushels: New York.....	1,435,570	290,350	286,550	2,552,050
Boston.....	3,361,120	316,445	1,308,440	5,086,005
Baltimore.....	4,343,904	266,301	1,133,440	5,743,645
P. c. of total:				
1882.....	56.2	11.4	11.2	21.2
1881.....	55.0	5.2	22.8	17.0
1880.....	52.1	3.2	13.6	31.1

Philadelphia and Baltimore together had 32.4 per cent. of the whole this year, against 39.8 last year and 44.7 in 1880. The receipts of Baltimore are much greater than it has had before in any week of this year, and are the largest since October. It is usually the first port to feel the new winter wheat crop, and this year ten-elevenths of its receipts are wheat.

##### Chicago Terminal Charges.

At a meeting held in Chicago last week, it was resolved that, on and after Aug. 1, the railroads leading east from that city—the Lake Shore, Michigan Central, Pittsburgh, Cincinnati & St. Louis, Fort Wayne, Chicago & Grand Trunk, and Baltimore & Ohio—agree for themselves

and the fast-freight lines not to bear any of the expenses for equalizing drayages or deliveries on west-bound traffic at Chicago, and if goods are not called for within 24 hours after delivery of notice to consignee to send the same to public warehouse for storage.

The following resolutions were also adopted:  
"Resolved, That all roads represented at this meeting agree that, commencing Aug. 1, they will charge and collect \$1 per car over or above the rate charge on all car-load freight (except live stock delivered at the Union Stock Yards in Chicago), when consigned to parties at the yards. These charges in all cases to be added to the through rate regardless of original point of shipment, and allowed to the terminal road in addition to the proportion of such rate and shown separately on way bill as a delivery expense and that all connections, including the trunk lines, must see that this expense is provided for in all contracts and bills of lading.

The following uniform charges for switching between points in and about Chicago will be made.

Delivery of all kinds of freight at points beyond the rails of Eastern roads, where cars are left by our engines, whether the property is taken at Chicago or it is re-consigned to a point beyond, \$2 per car.

Switching between packing-houses in Union Stock Yards, property to be loaded and unloaded by owners, \$2 per car. Upon local shipments originating at Chicago or Union Stock Yards, and switching between those points, property to be loaded and unloaded by owner, \$5 per car.

Upon local shipments originating at Bridgeport or Union Stock Yards and switched between those points, property to be loaded and unloaded by owner, \$6 per car.

##### Coal Movement.

Coal tonnages for the week ending July 15 are reported as follows:

	1882.	1881.	Inc. or Dec.	P. c.
Anthracite.....	681,633	685,532	D. 3,899	0.6
Semi-bituminous.....	59,373	105,738	D. 46,365	43.7
Bituminous.....	68,850	58,196	I. 10,653	78.4
Coke.....	47,942	42,907	I. 5,035	11.7

Anthracite production continues large, and the market is reported strong, with prices fairly maintained.

In the Cumberland Region there has been no change, though a tendency to compromise is reported among the strikers. In the Clearfield Region a part of the men are at work, and the shipments indicate that the rest are returning.

The coal tonnage of the Pennsylvania Railroad for the week ending July 15 was: Coal, 157,879; Coke, 47,942; total, 205,821 tons. The total tonnage this year to July 15 was 5,873,170 tons.

San Francisco coal receipts for the half-year ending June 30 were as follows: 1882, 414,800; 1881, 371,600; increase, 43,200 tons, or 11.6 per cent. The total business for the half-year is less than a good week's shipments from the Pennsylvania anthracite region.

##### Petroleum.

Stowell's *Petroleum Reporter* gives the following statements for the production of the Pennsylvania oil regions for June, in barrels of 42 gallons:

	1882.	1881.	Increase.	P. c.
Production.....	2,825,940	2,377,860	448,080	18.8
Shipments.....	2,172,685	1,729,697	442,988	25.6
Stock, June 30.....	29,850,952	24,441,191	5,409,761	22.2
Producing wells.....	19,500	16,700	2,800	16.8

The production is the largest on record. Of the total about three-fourths (2,160,000 gallons) came from the Bradford and Allegheny districts, the new northern fields.

The shipments have only been exceeded once before, in August of last year.

Of the stock reported 340,954 barrels were at the wells, 100,000 in private tanks and 29,418,998 barrels in the pipe lines.

During the month 340 new wells were completed, and 226 were in progress on June 30.

The shipments out of the region for the month were as follows:

	Barrels.	P. c. of total.
New York.....	988,382	45.5
Philadelphia.....	301,440	13.9
Baltimore.....	69,243	3.2
Cleveland.....	362,531	16.7
Pittsburgh.....	88,829	4.1
Down the Ohio.....	4,453	0.2
Local points.....	128,126	5.8
Refined at Creek refineries.....	229,681	10.6
Total.....	2,172,685	100.0

Shipments of oil refined at Creek refineries (reduced to its equivalent in crude) were as follows: New York, 114,377; Philadelphia, 6,471; Baltimore, 2,278; Boston, 31,169; local points, 75,386; total, 229,681 barrels.

Of the original shipments of crude oil, 850,808 barrels were by rail and 1,321,877 barrels by pipe lines. The heaviest rail shipments were 426,484 barrels over the Rochester & Pittsburgh, and 110,314 barrels over the Dunkirk, Allegheny Valley & Pittsburgh.

##### Crop Prospects.

The condition of corn reported by the United States Department of Agriculture July 1 is 85 per cent. of an average from the whole country, against 90 last year. The condition is about an average in all states south of the Potomac and the Ohio, except Virginia, West Virginia, North Carolina and Arkansas. The poorest condition is in the great corn states, as follows:

	Ohio.	Indiana.	Illinois.	Iowa.	Missouri.
1882.....	84	79	68	72	93
1881.....	83	79	61	77	94

Kansas is reported at 101 this year against 107 last (at this time), and Nebraska at 90 against 95. The actual yield last year was but about 70 per cent. of a full crop, and the maintenance of the present condition and the increase of 4 per cent. in acreage would give a crop of 1,490,000,000 bushels, against 1,195,000,000 last year. There is a chance for the condition to improve somewhat, and also a chance for very great depreciation, especially by frost. Immense damage was done on corn by frosts Aug. 29 and 30, when corn was not very late. Probably quite as much damage would be done this year by a frost as early as Sept. 15, the crop is so late; and there is a good deal, of course, that will suffer if there is frost before October. The Department estimates that the changes that may yet occur may make a difference of 500,000,000 bushels in the crop. The states which have the poorest condition (except Iowa) have some, decrease in acreage, and the fact that where there is an increase the condition fair or very good, must be taken into account. An average crop or the additional acreage would of itself amount to 70,000



per cent. below an average, which last year at the same time it was 9 per cent. below. The condition is bad (15 per cent. below an average) in the southern third of the State, which, however, contains less than one-seventh of the total acreage, and it is nearly an average (99 per cent.) in the northern third of the State, which has 57 per cent. of the total acreage of meadows.

The Ohio Board of Agriculture estimates the crops of 1882 as follows (based on the present condition, of course) in comparing with 1881. The condition now is the per centage of last year's condition at this time:

	Condition now.	Bushels, 1882.	Bushels, 1881.
Wheat.....	104	39,283,000	37,581,000
Corn.....	90	66,500,000	74,000,000

Oats are reported 12 per cent. better than last year; timothy hay, 31 per cent. better; pastures, 23 per cent., and potatoes, 37 per cent. better; while barley is 10 per cent. and clover meadow 3 per cent. worse.

The Minnesota Commissioner of Statistics has issued a preliminary estimate of the grain acreage of the state, showing a decrease of 13½ per cent. in wheat, an increase of 15½ per cent. in oats, of 29 per cent. in corn, and of 57 per cent. in barley, but the wheat is so much more than the total of the other grains that there is in all a slight decrease in the acreage of all grains (about 1 per cent.). There is a very large increase in wheat in some northwestern counties, but a large decrease in a larger number of counties in the southern part of the state. With favorable weather hereafter a crop of 41,900,000 bushels of wheat may be expected, against 32,660,000 bushels from the larger acreage last year. Oats and barley promise better than last year, but corn not as well.

#### Southwestern Association Rates.

The rates on grain from Missouri River points will be advanced 2½ cents per 100 lbs., 25 to 27½ cents for wheat, and from 20 to 22½ cents for other grains to Chicago. By agreement of the Southwestern and the Iowa Trunk Lines Association rates between Chicago and Council Bluffs, Omaha, and the Missouri River points further south, are to be the same hereafter. The rate to Omaha has heretofore been higher.

#### Western Trunk Lines Passenger Association.

A meeting of the Western Trunk Lines Association was held July 21 for the purpose of hearing the report of Commissioner Dixon, who had lately had a conference with the general passenger agents of the Eastern trunk lines regarding terminal charges on emigrant business at New York, and other matters relating to the business of the Association. Mr. Dixon reported that the Eastern trunk lines were carrying out the agreement regarding emigrant business entered into with the Western lines some months ago in good faith, and he could not discover that any of the trunk lines were discriminating in favor of lines not in the Association. A discussion was had regarding means by which the business in connection with the ocean lines could be facilitated.

A resolution was introduced to allow agents along the lines of the various Western roads to sell steamship orders direct. The resolution, however, was not acted upon on account of the absence of Mr. Charlton of the Alton and Mr. Stennett of the Northwestern. It will come up again for consideration at the next meeting of the Association.

#### Kansas City Passenger Rates.

At a meeting of the local passenger agents in Kansas City, July 18, it was proposed to put a stop to cutting rates from that city by the establishment of a union ticket office, to which all tickets must be taken for transfer.

Another meeting of the representatives of the Southern and Western pool lines was held in Chicago, July 21, to consider the complaint made by the Rock Island road that it was being discriminated against at Kansas City in the matter of unlimited tickets issued during the late Southwestern passenger war at very low rates. When peace was declared it was stipulated that these tickets, by whichever of the parties issued, should be good over either one of the contracting lines, and be redeemable at a certain fixed rate by the lines issuing them. The complaint of the Rock Island road was that these tickets were being so manipulated as to throw most of this traffic over its lines. After some discussion the matter was referred to Commissioner Midgley. The Rock Island road presented him with a proposition to the effect that each of the four lines carry 25 per cent. of this traffic, the handling of all these tickets being placed in the hands of one man at Kansas City. The Wabash and the Chicago & Alton Roads have accepted these terms. Mr. Potter, of the Chicago, Burlington & Quincy, was not present, but it is understood that he has since agreed to the proposed compromise.

#### Illinois Commission Rates.

A conference between the Illinois Railroad Commissioners and representatives of the railroads of the state was held in Chicago, July 17. The railroad men represented that adoption of the Commissioners new classification would not only embarrass their business, but would work discrimination and injustice to many local interests. They suggested the preparation of a new classification. The Commission promised to consider the matter.

#### California Through Passengers.

Arrivals and departures of through passengers at San Francisco for the half-year ending June 30 were as follows:

	Arrived.	Departed.
By rail.....	27,916	18,238
By sea.....	24,111	5,816
Total.....	52,027	24,054

Concerning this statement the San Francisco Bulletin says: "The arrivals by railroad for the half-year are the largest since 1875. We received 8,000 more by rail in the past six months than for the corresponding period last year, and 11,000 more than in 1880. This increase is encouraging. The gain by water routes has been more marked, but less satisfactory, because of the large element of Chinese. Of the 24,111 passengers of all classes landed here by ships in the first half of the current year, 20,378 came from China and Japan, and it is safe to say the Chinese form 95 per cent. of that number. Such an influx from that section is without a parallel. For the same period last year, the arrivals from China and Japan were only 8,159, while in 1880 only 8,649 landed here. It is some consolation to know that the end to heavy immigration of this kind is close at hand."

#### Freight Rates to Missouri River Points.

The Committee of General Freight Agents, appointed at the recent meeting of the General Managers of the roads to Missouri River points, to consider the question of equalizing the rates between points on the east side of the Missouri River and those on the west side, has completed its work and agreed to make the rates to Council Bluffs the same as to Omaha. It was also agreed to make the Kansas City rates the same as the Omaha rates. This causes an advance of from two to five cents per 100 lbs. on all classes of freight from Chicago and St. Louis to Council Bluffs and Kansas City, as the Kansas City rates heretofore were the same as those to Council Bluffs.

#### St. Louis Transfer Charges.

A circular issued jointly by the General Freight Agents of the roads running east from St. Louis respecting transfer rates from St. Louis and dated July 24 announces that the new tariff of the St. Louis Bridge and Tunnel Co. provides the following rates on through and local business:

"On all classes of freight (except as below) in car-loads to one consignee, to be loaded or unloaded by owner on track at Union Depot or at east or west connecting lines, including St. Louis, Iron Mountain & Southern Railway Co., 2 cents per 100 pounds; but not less than \$5 per car.

"Barytes, brick, clay, cement, earth, gravel, dry hides, lime, ore (of all kinds), plaster, salt, sand, tobacco (unmanufactured), wool and whiting, loaded or unloaded by owner on track at Union Depot, or through to east or west connecting lines, including St. Louis, Iron Mountain & Southern Railway Co., 1½ cents per 100 pounds, but not less than \$4 per car.

"General merchandise billed in less than car-load lots—Through: East or west, 5 cents. per 100 pounds. Local: To St. Louis proper, 5 cents per 100 pounds.

"The transfer charges on railway equipment will be as follows:

	Each.
Flat-cars, as freight.....	\$2.50
Box-cars, as freight.....	3.00
Baggage and mail cars, as freight.....	5.00
Passenger cars or sleepers, as freight.....	6.00
Locomotives and tenders, narrow-gauge, as freight.....	10.00
Locomotives, tank or switching.....	12.00
Locomotives and tenders, standard gauge.....	15.00

"Powder in transit, \$10 per car. (No powder for city delivery received.)

"Barley in bulk will be received for elevator delivery only.

"Extra large cars of agricultural implements, buggies, carriages, furniture, light wagons and machinery, \$1 additional.

"Bonded freight not less than \$5 per car.

"All connecting lines, and all agents east of the Mississippi River, are requested, on and after this date, to allow the above arbitraries (taking note that there are practically only two classifications, two cents and five cents respectively) on all business going to St. Louis proper and beyond.

"The tariff of the St. Louis (wagon) Transfer Co. provides a transfer rate of five and four cents respectively on all business to St. Louis proper."

#### RAILROAD LAW.

##### Regulating Inter-State Commerce.

A dispatch from Des Moines, Ia., July 14, says: "The Supreme Court yesterday delivered an opinion of interest to railroads and shippers in this State and Illinois. In 1875 Carlton & Co., of Ackley, shipped by the Illinois Central road 129 car loads of wheat to Chicago, which were billed through at \$74 per car. In 1876 and 1878 they shipped 120 car loads in the same way and at the same rate. When the first shipment was made the Iowa Granger tariff law was in force, which fixed a much lower rate as the maximum which railroads could charge. But the grain was shipped at rates fixed by the railroad company. The plaintiffs brought an action for damages to recover the difference between the rates paid and the rates allowed by the Iowa law, and set up that, the contracts of shipment having been entered into in Iowa, the laws of Iowa entered into and became a part of the contracts, and the statute of Iowa fixing the rate of transportation governed the rate for the entire distance of the shipment; or, in other words, to the end and completion of the contract.

"The defendants set up that the Iowa statute was void as to shipments from Iowa to other states, because it was in violation of Art. 1, Sec. 8, of the Constitution of the United States, which gives to Congress exclusive power to control inter-state commerce. In the Court below the trial was by the Court on agreed facts. Judgment was rendered to the railroad company, defendant, for costs, and plaintiff appealed.

"The Supreme Court, following the decisions of the United States Supreme Court, held that it is competent for states, in the absence of Congressional legislation, to legislate respecting inter-state commerce, but such legislation must be local in its application as to bridges, dams, vessels, wholly within the state. It cannot apply to subjects national in character. States may fix reasonable charges for transportation within the boundaries of such state, which may incidentally affect commerce between states, yet such laws are not regulations of inter-state commerce because of such incidental results. If the statute of Iowa was a valid enactment, then it would enter into and become a part of contracts of shipments made under it. The rates fixed by it would govern the shipment the entire distance. The carrier would be bound to perform the contract. But the statute of Iowa is an unauthorized regulation of inter-state commerce, and cannot enter into and become a part of any contract. In the case at bar the contract of shipment was an entirety. It cannot be severed and made to apply partly to the shipment in Iowa and partly to the shipment in Illinois. The railroad company had the right to disregard any statute of Iowa which sought to regulate shipments to points outside of that state and to make its own contracts and fix its own rates. Having done so, the plaintiffs cannot recover under any state law because it is void and repugnant to the Constitution of the United States.

"Judge Beck dissented on the ground that the statute of Iowa was not in conflict with any act of Congress, for Congress had taken no action on the subject, and until Congress does act, the states are free to legislate upon it, under the power vested concurrently in the states and national government. That the constitutional inhibition was intended to prevent the imposition of burdens and restrictions on commerce by the states. The Iowa statute is to promote the expedition and cheap transportation of property and prevent burdens and impediments such as unnecessary delay, unreasonable and unjust charges, discriminations, etc. Hence it is not an encroachment upon the authority of the general government. The contract of shipment, therefore, having been entered into in this state, it was subject to the laws of this state.

"This decision is the first made upon the power of the Legislature to regulate tariff rates on shipments made out of the state, and settles the question, although it is probable the plaintiffs will appeal, relying on the doctrine set up in the dissenting opinion of Judge Beck."

##### Rail Joints and the Johnson Patent.

The suit of Johnson & Sanford against the Flushing & North Shore Co., was brought for alleged infringement of a patent granted to Asa Johnson in 1857 for an improved method of fastening sheet metal on roofs, the main point concerned in the present case being the use of bolts passing through slots in the metal. In 1872 this patent was re-issued, and the patentee then claimed that it covered the fish-plate joint now in common use for fastening rails. The suit was brought against the Flushing & North Shore Co., and was taken up and defended by the Eastern Railroad Association.

The United States Circuit Court having dismissed the bill,

the patentee appealed to the Supreme Court, which has just rendered a decision affirming that of the Circuit Court. The opinion of the Supreme Court, after reviewing the case at length, concludes as follows:

"It is sufficient to say that the proof fails to show that Johnson, in 1843, or at any time before the fish-plate joint for uniting iron rails came into use, was the inventor of that device, or that he ever invented it at all. It was not described in his original patent, and he never set up any claim to it until the year 1872, when its use had become universal wherever railroads were constructed.

"On both grounds, therefore, the invalidity of the re-issued patent and want of novelty in the invention which appellants contend was covered by the original patent, we are of opinion that the Circuit Court was right in dismissing the bill. Its decision must, therefore, be affirmed."

#### The Tanner Brake Cases.

The suits pending in the United States Circuit Court in Portsmouth, N. H., to recover damages for the alleged infringement of the Tanner brake patent by the Concord, the Concord & Claremont and the Boston, Concord & Montreal companies, have been dismissed by the Court, in accordance with the decision of the Supreme Court of the United States in the similar suit against the Lake Shore & Michigan Southern.

#### THE SCRAP HEAP.

##### Locomotive Building.

The Pittsburgh Locomotive works are building several engines for the Pittsburgh, Chartiers & Youghiogheny road.

The Baldwin Locomotive Works in Philadelphia are building five passenger and 10 consolidation freight engines for the Lehigh Valley road.

The Rogers Locomotive Works in Paterson, N. J., have nearly finished several engines for the Pensacola & Atlantic road.

##### Car Notes.

The Beaver Falls (Pa.) Car Works, are building a number of coal cars for the Pittsburgh, Charleston & Youghiogheny road.

J. Harris & Co., in St. John, N. B., have just finished a baggage car, a postal car, a second-class passenger car, and a very handsome first-class passenger car for the Intercolonial road.

The Harlan & Hollingsworth Co., in Wilmington, Del., have just delivered two new sleeping cars to the Raleigh & Gaston road. They are to run between Portsmouth, Va., and Charlotte, N. C., over the Seaboard Air Line.

The car shops of the Fitchburg Railroad are making several new passenger cars for the road.

The Pullman car shops have just completed four handsome sleeping cars to run on the Chesapeake & Ohio road.

The Indianapolis Car Works have begun on a contract for 1,000 box cars for the New York, Chicago & St. Louis road. Of course, the cars will be "nickel-plated."

The Jackson & Sharp Co., in Wilmington, Del., has completed two baggage cars and several passenger cars for the Pensacola & Atlantic road.

The New York, New Haven & Hartford shops, in New Haven, Conn., have completed 13 passenger cars for the road, and have begun work on 40 more.

##### Bridge Notes.

Clark, Reeves & Co., at Phoenixville, Pa., have the contract for the new bridge over the Susquehanna at Lewisburg, Pa., on the Philadelphia & Reading's new line to Williamsport. It will be 2,400 ft. long in 10 spans, and is to be finished by the end of November.

The Central Bridge Co., of Buffalo, N. Y., has the contract for the bridge over the Delaware River at Portland, Pa., for the Pennsylvania, Slatington & New England road.

Proposals are called for by a joint committee of the boards of chosen Freeholders of Passaic and Bergen counties in New Jersey for an iron highway bridge over the Passaic River below Dundee Dam. Particulars may be had by applying to George V. DeMott, Chairman, at the Clifton Grove Hotel, Passaic, N. J.

##### Iron and Manufacturing Notes.

The Phoenixville Rolling Mill having turned out a bar of ¾-in. round iron 130 ft. long, and the Dover (N. J.) Rolling Mill one 136 ft. long, the Catsasqua (Pa.) Rolling Mill now goes up head with a bar of the same diameter 233 ft. long.

John A. Hambleton and associates, of Baltimore, have bought the Loup Creek property on the Great Kanawha River and the Chesapeake & Ohio road, in Fayette County, W. Va. The tract comprises 24,242 acres of land, most of it heavily timbered, and known to be rich in coal and iron ore.

The South Boston Iron Works have nearly completed for their own use two 90-ft. lathes, which are thought to be the largest and heaviest lathes in the world. The beds made in sections of 30 ft. each. The head-stocks and face-plates weigh 10 tons each, and each bed section 10 tons. The completed lathes will each contain 600,000 lbs. of iron. They are built specially for boring out cannon, but are adapted for all heavy work.—American Manufacturer.

The second stack at Sloss Furnace in Birmingham, Ala., is well advanced and will be ready to go into blast by October.

The rail mill at the Rome Iron Works in Rome, N. Y., is to be changed to a mill for making skelp iron and merchant bar.

Alice Furnace in Birmingham, Ala., is being rebuilt and enlarged, and a new blowing engine is to be added.

A new company is making arrangements to build a blast furnace and rolling mill near Goldsboro, N. C., on the Neuse River.

The Morton, Frog & Crossing Co., has been organized to make frogs and crossings of the Morton pattern, and has bought land in South Chicago, where a factory will be built.

##### The Rail Market.

Steel rails are quiet, with little new business reported. Quotations continue at \$48 to \$50 per ton at mill.

Iron rails are dull, and only small sales are reported. Quotations are \$45 to \$48 per ton at mill, according to section, but it is probable that large orders could be placed a little lower.

Spikes are active at \$3.10 to \$3.15 per 100 lbs.; fish-plates, a little lower at \$2.50 to \$2.70; track-bolts, \$3.75 to \$4.25.

Old iron rails are quiet with few sales reported. Quotations are \$26 to \$27 per ton in Philadelphia for tees, and \$28 for double-heads.

##### Prices of Scrap.

Pittsburgh quotations for scrap iron and steel are as follows: Old car wheels, \$26 to \$27; cast borings, \$15 to \$16; crop ends, \$26 to \$26.50; wrought turnings, \$20 to \$22; No. 1 wrought scrap, \$27 to \$29; old car springs and steel axles, \$38 to \$40.

Quotations for cast iron and crop ends are per gross ton; for wrought iron and steel, per net ton.



### The Iron Strike.

The strike of the iron workers is now practically confined to Pittsburgh and vicinity, the Cleveland Rolling Mill Co., whose works were one of the chief points of attack, having its mills fully in operation with non-union men. General quiet continues in Pittsburgh, and nothing has happened to justify the predictions of an approaching compromise which were freely made two weeks ago. One or two small concerns have signed the scale and gone to work, but they are not considered of sufficient importance to affect the final result, which is still doubtful.

### New York & Brooklyn Bridge Proposals.

The trustees of the New York & Brooklyn Bridge will receive at their office, No. 21 Water street, Brooklyn, N. Y., until Aug. 12, bids for furnishing two steel wire traction ropes, each 1½ in. diameter and 11,600 ft. long.

Bids will also be received at the same time and place for furnishing, erecting and putting in running order the rope-driving machinery required for operating the railroad over the bridge.

Drawings may be seen and specifications and other information obtained at the office.

### New Passenger Cars.

A new passenger car has just come out of the shops of the Fitchburg railroad, which deserves more than a passing glance, and two more of the same kind will be ready for use within a fortnight. This car is of plain exterior, painted yellow, and is mounted on large trucks with steel wheels, and an arrangement of springs, which, it is believed, will prevent to a great degree the unpleasant swaying motion when passing rapidly round curves. Miller platforms and Westinghouse brakes, with other modern appliances for safety, are provided, and the windows are furnished with fenders for cinders, arranged to work automatically by the movement of the train. Entering the car, one is struck by the general air of spaciousness and comfort. The clerestory of the monitor roof is unusually wide, and its sides are apparently unbroken by any ventilators, but closer observation shows 34 ventilators, so arranged, however, as to be unnoticed by the casual observer; at each end of the car there is a large ventilator, partially concealed by lattice work. In winter the car is to be heated by hot air forced through a conductor at the bottom of each side, with a register at each seat; this arrangement is utilized in the summer for ventilation purposes, cold air being forced through by the motion of the car. The interior finish is mainly mahogany, with panels of ash, burl and French walnut, and the top of the car has a light-colored bead-lining. The double lamps in the center of the car, the racks on the sides, the arms of the seats and other metal work are of gold bronze. The seats are upholstered in light red and have Hale & Kilburn's spring seats and backs, made expressly for the Fitchburg road, and differing materially from the common make; the seats are 20 inches wide, and the backs are so arranged as to fit the passenger's back perfectly; they are the most comfortable car seats the writer ever occupied. The car is 56 feet long and will seat 68 passengers. At one end is a water-closet and lavatory, which call for a special description, as they are the first of the kind ever put into a railroad car. On one side of the car is the lavatory, consisting of a marble slab with a set bowl, and beneath it is a cylindrical tank containing water under 40 pounds pressure, obtained from the air brake system, and connected by pipes and faucets with the water-closet and the wash basin. Also connected with it are 50 feet of hose, which can instantly be utilized for extinguishing a fire in the car or elsewhere near by. The tank is filled either from a hydrant or by buckets from the outside of the car, and, where the air brake system is not used by a railroad, an air pump can supply the requisite pressure. The entire apparatus is the invention of Mr. A. M. Granger, and appears excellently adapted to the work laid out for it. These new cars have been built under the personal supervision of Mr. J. W. Marden, the Master Car Builder of the road, and they will speak for themselves to every person who rides in them. They are designed to be put on through trains, and the one already out of the shop is to take a special party to Saratoga on Saturday.—*Boston Herald, July 22.*

### A Blasting Accident.

A dispatch from Poughkeepsie, N. Y., July 13, says: "A terrible accident occurred on the West Shore Railroad this afternoon, about one mile south of Milton, on Cameron & Fagan's contract, where 28 laborers, mostly Italians, were employed. Thomas Eagan, the foreman, was in the act of tamping a hole for a blast, in which were about two kegs of black powder, when suddenly there was a premature explosion. William Powers, a laborer, was at work above Eagan on the rocks, and under Eagan, 15 ft. below, were a number of other laborers. Powers saw Eagan sitting upright, with a stone weighing 100 pounds on his feet. He hurried to him and threw it off with an iron bar, and then went to the assistance of the others. He saw two Italians lying dead and two alive, one of the latter crushed in the breast, the other sitting partly upright, with his legs crushed by a stone, weighing five tons, which rested on them. They got jacks and endeavored to move the stone, but found it impossible. The man will no doubt die. Powers says 28 men were at work there and he knows that 18 are safe. Eagan and a laborer named Mike Callahan were brought to Milton on a boat. The others were cared for as well as possible. The following is a list of the killed and injured:

"No. 119, an Italian, crushed to death, neck broken; 173, Italian, crushed to death; 140, missing, supposed to be buried under the debris.

"Injured.—Thomas Eagan, foreman, badly hurt internally and about the face; John Fennimore, laborer, leg broken in four places, skull fractured and hip broken, will die; Mike Callahan, right arm broken and head hurt, case serious; James Sedorell, slightly injured; Barney Horan, badly burned and cut over the eye; 187, Italian, legs crushed, will die; 185, Italian boy, water-carrier, terribly burned about the head, will die; 218, Italian, one leg crushed by a stone weighing three tons, right arm broken; 49, Italian, leg broken. The names of the Italians cannot be ascertained, as all are known by numbers only."

### A Narrow Escape.

The Des Moines (Ia.) *Leader* of July 19 says: "On Tuesday morning a special train of Chicago, Burlington & Quincy officials arrived in Des Moines from Albia, and left via Indianola for Chariton. The train consisted of a locomotive, the President's car and the directors' car. As the train was approaching the bridge over White Breast, on the Chariton & Indianola Branch, the two coaches suddenly bounced off the rails and gave the magnates a severe jostling, but the engineer instantly reversed the locomotive, and the cars were stopped right side up on the ties within one foot of the high embankment of the stream, into which the entire party would have been plunged had the train not been at a moderate rate of speed. Among the magnates on board were T. J. Potter, Second Vice-President; K. H. Wade, Superintendent of the Iowa Division; Agent Wingate of Des Moines, and about twenty others. An eye witness says that the party were the palest and most awed assemblage of railroad

men he has ever seen, as they emerged from the coaches and witnessed their thrilling escape from precipitation into the water beneath them."

### A Peculiar Accident.

Mr. Lee Van Sant, a brakeman on Conductor McClellan's train, met with a serious and at the same time a very peculiar accident while coming down the mountain on the accommodation last night. Mr. Van Sant was sitting at a window near the front end of one of the cars, and just as the train was approaching the South Fork station a window couple seats ahead of him was broken by an iron bar which crashed through it with tremendous force, and then swung around and struck the gentleman on the arm. He says that when the crash came he instinctively put his arm before his face, and this movement probably saved his life, as the bones of the arm were broken into small pieces, both above and below the elbow.

The supposition is that Mr. Van Sant was struck by a loose bar on the door of a freight train which was passing the accommodation at the time of the accident. The matter will be investigated thoroughly.—*Johnstown (Pa.) Tribune.*

### A Runaway Turn-Table.

A singular occurrence took place recently at the Pittsburgh round-house, on the Pennsylvania Railroad. A laborer was engaged in whitewashing the pit, when it became necessary to have the turn-table moved. Although there is an engineer in charge of the little engine which runs the table, the laborer thought to save time and trouble by starting it himself. He turned on the steam and the table started around, but when he attempted to stop he made a mistake and turned on all the steam in the boiler. The table went faster and faster until it made about 40 revolutions a minute, the whitewasher vainly attempting to stop it. Workmen stood on the edge of the pit and tried to shout to the laborer to turn the little wheel in the other direction, but for a time the experimenter failed to catch the idea. In the meantime an old man who had been upon the table when it started had thrown himself down and was holding on to the railroad track for dear life, thinking every minute that he would be hurled off and ground up. Fortunately nothing like that occurred. The whitewasher finally got the right idea. He began to reverse the wheel and soon the table was brought to standstill, with no casualties whatever.

### OLD AND NEW ROADS.

**Addison & Northern Pennsylvania.**—Work is soon to be begun on this road, which is to run from the Erie at Addison, N. Y., south by west to Elkland, Pa., and thence through the Cowanesque Valley to the coal mines of Tioga County.

**Baltimore & Ohio.**—A dispatch from Columbus, O., July 22, says: "Judge Bingham, of the Court of Common Pleas, to-day decided the cases between the Baltimore & Ohio, as lessee of the Ohio Central, and the Pittsburgh, Cincinnati & St. Louis, granting an order of partition for the line between Columbus & Newark, and declaring that the title to the yard rested in the Baltimore & Ohio. The injunction suit was decided against the Baltimore & Ohio, and the Pittsburgh, Cincinnati & St. Louis is given the right to do freight and passenger business over the line. The injunction is made perpetual as to the payment of the expenses of the division.

The trouble will probably result in the building of a second track on the same right of way.

**Baltimore & Potomac.**—Grading for the second track is now nearly completed, and will probably be finished next month. Some work remains to be done on the bridges. Rails will be laid on the second track this season to Bowie, 26 miles from Baltimore, leaving 16 miles to be laid next year.

**Bedford, Springville, Owensboro & Bloomfield.**—The United States Circuit Court has decided that the Indianapolis Rolling Mill Company is the legal owner of the stock and bonds which it now holds, and which it originally received as security for iron furnished for the road. This vests the control of the road in the Rolling Mill Company.

**Boston, Hoosac Tunnel & Western.**—It is reported that this company is negotiating with the Rochester & Pittsburgh for a consolidation or a union of interests and the joint construction of the line from Schenectady to Rochester and Buffalo.

**Buffalo, Pittsburgh & Western.**—Contracts are to be let very soon for the extension of this company's New Castle & Oil City line from its present terminus at Stoneboro, Pa., to Jackson, a distance of 37 miles.

On the extension from Dunkirk to Buffalo track is laid from Dunkirk northeast four miles, and from Bay View southwest about seven miles, and the work is being pushed.

**Burlington, Cedar Rapids & Northern.**—Track on the Pacific Division is now laid to Spirit Lake, Ia., 29½ miles northwest from the late terminus at Emmetsburg and 201 miles from the main line at Vinton. Regular trains run through to Spirit Lake this week. Work is still progressing on the extension, which is to run through to Worthington, Minn., about 30 miles further, this season.

**Catskill Mountain.**—This road is to extend from Catskill Landing, N. Y., on the Hudson, to Palenville, in the center of the mountain region, a distance of 16 miles. It is now completed to Lawrenceville, 12 miles from Catskill, and is to be opened for business next week. The Catskill Mountain region is in summer the resort of a very great number of people, and the road will have a large passenger business from the start, as it will do away with the tedious stage ride now necessary to reach the mountain resorts.

**Central of New Jersey.**—Receiver Little has asked the Chancellor for authority to set aside a certain contract made by the late Receiver Lathrop with Vanderbilt & Hopkins for ties and lumber. No complaint is made of the quality of the lumber or of the terms, but only that the amount contracted for is excessive, being more than the road will need for years. The Receiver claims that it is not for the advantage of the road to buy at current prices, and that the payments required are greater than can well be afforded. Deliveries under the contract are now being made in such quantities that it is impossible to find store room for all.

**Chicago & Atlantic.**—Plans have been prepared and work will soon be begun on the shops for this road at Huntington, Ind. This company will build there a round-house, machine, blacksmith, boiler, car-repair and paint shops, besides storehouses and division offices.

**Chicago, Burlington & Quincy.**—This company makes the following statement for May and the five months ending May 31:

	May.	Five months.
Earnings.....	\$1,505,261	\$7,718,451
Expenses.....	857,494	4,344,061
Net earnings.....	\$647,767	\$3,374,390

For the five months there was an increase of \$708,700, or 10 per cent., in gross earnings; an increase of \$866,246, or

9.2 per cent., in expenses, and an increase of \$337,461, or 11.2 per cent., in net earnings.

**Chicago & Northwestern.**—Contracts are reported let for an extension of the James River branch of the Dakota Central line from its present terminus, Ordway, Dak., to Columbia, at the falls of James River. There are now about 50 miles graded on the branch from the Maple River line to Correctionville, Ia., and track-laying will be begun soon. On the extension of the Sioux Rapids Branch to Calliope, Ia., 43 miles are graded and track-laying has been begun.

**Cincinnati, New Orleans & Texas Pacific.**—It is stated that the earnings of this company (which operates the Cincinnati Southern) for the half-year ending June 30, were sufficient to pay all expenses and the rental of the road, and to leave a surplus of \$23,692, which is applied to a sinking or renewal fund.

The following is the detailed statement for the six months ended June 30, presented at the meeting at which it was determined to pass the dividend. The receipts were:

January.....	\$180,922.64
February.....	188,798.55
March.....	226,405.70
April.....	180,112.29
May.....	208,188.15
June.....	189,756.04
Total.....	\$1,184,183.37
Operating expenses (including taxes).....	820,443.13
Net balance.....	\$363,740.24
Surplus, 1881.....	65,952.65
Total.....	\$429,692.89
Paid the trustees for lease of the road.....	406,000.00
Balance.....	\$23,692.89

But, as \$30,000 was ordered put aside as a nucleus for a sinking fund, there is a debit balance on the operations of the six months of \$6,307.11.

**Columbia & Palouse.**—This company has filed articles of incorporation to build a railroad from Palouse Junction, Wash. Ter., on the Northern Pacific road, 51 miles northerly from Wallula Junction, to the town of Colfax in Whitman County, together with a branch line from a point about three miles west of Colfax, southeasterly to Moscow, I. T., and also a branch line from a point of junction at or near the mouth of Rebel Flat Creek, northeasterly to the town of Farmington. The capital stock of this company is \$1,000,000; office in Walla Walla.

**Columbus, Hocking Valley & Toledo.**—The report that the Cleveland syndicate had sold its controlling interest in this road to the Standard Coal & Iron Company, is denied by officers of the company. It is admitted that negotiations for the sale were in progress, but the parties could not agree and they are now at an end, for the present, at least.

**Connotton Valley.**—Track on the Straitsville Extension is now laid from Canton, O., southwest to Navarre, 13 miles. Work is progressing beyond that point. The first engine entered Navarre just in time to save a bonus of \$5,000 voted by that town.

**Danville & St. Louis.**—A contract for the sub-structure work of 200 miles of this projected road, from Danville, Ill., to East St. Louis, has been let to Harris Brothers & Co., of Brattleboro, Vt. They are to begin work early in August.

**Denver & New Orleans.**—It is reported that this company has succeeded in making an agreement to place a sufficient amount of its bonds to build the road to the Canadian River, where it is to meet the Ft. Worth & Denver City road.

The United States Circuit Court at Denver, Col., has refused the motion of this company for an order to compel the Atchison, Topeka & Santa Fe to exchange business at Pueblo on the same terms and conditions as with the Denver & Rio Grande road.

**Fitchburg.**—The work of improving the Vermont & Massachusetts Division is making steady progress. The second track will be finished to Orange this year, and is now laid from Royalston nearly to Pequoig. Three bridges have been dispensed with by changing the course of Miller's River at two different points. The lowering of the grade near Baldwinville is in progress, and work has been begun on the new location between that place and Royalston. At Miller's Falls an exchange of track with the New London Northern has been made, and this road has been lowered so as to pass under the Northern tracks, doing away with the grade crossing.

**Genesee Valley.**—This road will extend, when completed, from Rochester to Hinsdale, N. Y., a distance of 100 miles, connecting at the latter place with the Buffalo, New York & Philadelphia road. It has been leased and is to be operated by the latter road.

Track has been laid from Hinsdale north to a point near Portageville, a distance of 41 miles, and from Nunda to Mt. Morris, a distance of 14 miles; also 37 miles between Rochester and Mt. Morris. It is expected the road will be completed and trains running by Sept. 1 next. Trains are now running from Mt. Morris to Nunda, and from thence to Swains, connecting with the Buffalo Division of the Erie and the Alleghany Central road at the latter place.

That portion of the road extending from Nunda to Swains, a distance of 9 miles, has been built under the name of the Rochester, New York & Pennsylvania road. But that also has been leased by the Buffalo, New York & Philadelphia.

**Georgia Pacific.**—Messrs. Gordon and Perkins, of this company, are now in London, and it is understood that they are negotiating for the sale of \$3,000,000 of the bonds of this company.

**Hannibal & St. Joseph.**—The suit to restrain the Governor of Missouri from selling the road to enforce payment of the state aid bonds (the principal of which the company has paid) was heard last week in the United States Circuit Court, before Judge McCrary.

**Hartford & Connecticut Valley.**—The stockholders met in Hartford, Conn., July 20, and formerly voted to accept the act passed by the Connecticut Legislature authorizing the taking of certain lands; also the act passed by the Massachusetts Legislature authorizing the extension of the road to Springfield.

**Humeston & Shenandoah.**—Work is progressing well on this road, and the company hopes to have the track all laid in September. It is to run from Humeston, Ia., westward to Shenandoah, about 100 miles, and is built and owned jointly by the Chicago, Burlington & Quincy, and the Wabash, St. Louis and Pacific companies.

**Indianapolis & St. Louis.**—It has been reported that at the foreclosure sale there would be a contest over this road between the Pennsylvania and the Bee Line. These reports have been set at rest by the announcement that a contract has been made and approved by which the Pennsylvania Railroad Company sells its half interest in the stock



of the road to the Cleveland, Columbus, Cincinnati & Indianapolis Company. The terms of the sale are not made public.

**Kanawha & Chesapeake.**—This company has filed articles of incorporation to build a railroad from a point on the north side of the Great Kanawha, near Charleston, W. Va., following the course of that river to the Chesapeake & Ohio road, near Kanawha Falls, in Fayette County. The distance is about 30 miles, the line being parallel to the Chesapeake & Ohio, but on the opposite side of the river.

**Maine Central.**—A somewhat doubtful report is telegraphed from St. John, N. B., that this company has agreed to lease the European & North American and the New Brunswick & Canada roads. The report does not seem worthy of credit without further confirmation. Latest advices are that the report has no foundation whatever in fact.

**Mansfield.**—The correct length of this road, from Mansfield, La., to Mansfield station on the New Orleans Pacific road, is 1.83 miles. An error in a former statement made the length of the road 7 miles. Mansfield is directly north of the junction.

**Missouri Railroads.**—The report of the Missouri Railroad Commissioners has been submitted to the Governor. It states that 242 miles were added to the railroads of the state in 1881, and 15 miles taken up, leaving 4,234 miles of main track at the close of the year, with 18 miles of second track and 649 miles of sidings. The following figures are given:

Steel rails, miles, Dec. 31, 1881.....	2,416
Steel rail, miles, laid in 1881.....	328
Cross-ties used in renewals, 1881.....	1,971,981
Earnings in Missouri, 1881.....	\$26,839,326.74
Passengers carried, 1881.....	6,565,656
Tons freight moved, 1881.....	12,650,000
Employees in Missouri, Dec. 31, 1881.....	19,700

At the close of the year there were 3,976 bridges reported on the railroads of the state, of which 122 were iron truss, 17 iron trestle and girder, 110 combination truss, 591 wooden truss, and 3,166 wooden truss and pile bridges. The total length of these bridges was 68.07 miles. There were built last year 369 bridges, having a total length of 9.14 miles. There were 952 men employed in construction and repair of bridges.

During the year there were 6 passengers (1 in each 1,084, 276 passengers carried) killed—none from company's fault. Forty-two passengers (1 in each 156,325 passengers carried) injured—32 from causes beyond their own control.

**Monongahela Bridge Co.**—The stock of this company has all been subscribed and contracts will soon be let. The bridge is to cross the Monongahela at Pittsburgh, and will be used by the Baltimore & Ohio, the Pittsburgh & Lake Erie and the Pittsburgh Junction roads.

**New York Central & Hudson River.**—Plans have been prepared for a fine passenger station in Rochester, N. Y. It will be of brick, with stone trimmings, one story high, except on one end, where a second story will be added for offices, and a tower 82 ft. high will stand. The train-house will be 682 by 130 ft., with three tracks passing through it.

**New York Freight Handlers' Strike.**—It is now apparent that the strike of the freight handlers in New York has practically failed, although the strikers still hold out, and have even induced some of the men employed in their places to join them. All the companies, however, now have considerable forces, and the new men are being gradually taught their work, while their number is large enough to give the companies a chance to weed out the worthless material. The companies profess to be quite able now to handle all the freight, although there is still some complaint of delays, especially with local freight.

The long waiting and the gradually diminishing prospects of success have not improved the temper of the strikers. There has been nothing like rioting, and the leaders have exercised all their influence to keep the men quiet, but many cases are reported where men have been attacked and beaten by strikers, or by hangers-on, who would be only too glad to promote disorder. Money for the support of the strikers has come in slowly, and some of them are probably suffering.

**New York & New England.**—In the month of June this company's transfer boat carried 1,725 loaded east-bound freight cars across the Hudson at Newburg. Westward there were transferred 762 loaded and 1,110 empty cars, making a total movement of 3,597 cars, an average of 120 a day.

**New York, Ontario & Western.**—The following notice is issued from the office of this company, No. 35 Wall street, New York:

"Notice is hereby given that the board of directors, having resolved to dispose of the West Shore Railway Company's bonds owned by this company, offer the right to subscribe for the same, on special terms, to the stockholders of this company.

"Printed circulars, giving full information, and subscription blanks, may be obtained on and after Aug. 5, 1882, upon application at this office.

"For the purpose of this subscription, the transfer books of the company will be closed on Saturday, Aug. 5, 1882, at 3 p. m., and reopened on the morning of Tuesday, Aug. 15, 1882.

"Stockholders of record at the date of the closing of the books, as above, or those holding assignments of the rights to subscribe pertaining to the stock, may subscribe under said circular, from Aug. 7 to 14, 1882, inclusive."

**Nashville, Chattanooga & St. Louis.**—This company makes the following statement for June and the twelve months of its fiscal year ending June 30:

	June.	Twelve months.
Earnings.....	\$119,074	\$1,882,780
Expenses.....	74,827	1,114,562
Net earnings.....	\$44,247	\$768,218
Interest and taxes.....		544,193
Surplus.....		\$224,025

For the twelve months there was a decrease of \$221,188, or 10.5 per cent., in earnings; a decrease of \$151,260, or 12.1 per cent., in expenses; a decrease of \$69,928, or 8.3 per cent., in net earnings; an increase of \$58,477, or 14.4 per cent., in interest and taxes, and a decrease of \$138,405, or 38.2 per cent., in the surplus.

**New York, Lake Erie & Western.**—No action has been taken on the request of the brakemen for an increase of pay, the company claiming that it was made without authority by a few irresponsible parties. The trackmen have received an increase of about 10 per cent. in wages.

**New York & Long Branch.**—Alexander Kier, the track foreman, who is charged with having caused the recent accident at Little Silver by his negligence in leaving the rails on the bridge over Parker's Creek imperfectly spiked, has been arrested on a charge of manslaughter, and held to await the action of the grand jury.

**Norfolk & Western.**—This company makes the following statement for June and the six months ending June 30:

	June.	Six months.
Earnings.....	\$174,843	\$1,024,950
Expenses.....	101,990	620,460
Net earnings.....	\$72,853	\$404,490

Expenses include estimated proportion of yearly taxes. For the six months there was an increase of \$29,830, or 3.0 per cent., in earnings; an increase of \$61,342, or 10.9 per cent., in expenses, and a decrease of \$31,512, or 7.2 per cent., in net earnings.

**Oakland, Mt. Diablo & Stockton.**—This company has filed articles of incorporation to build a railroad from Oakland, Cal., by East Oakland, Fruitvale, the San Leandro Valley and Lodi to Stockton. The distance is estimated at 63 miles.

**Ohio Central.**—The following statement is published for the half-year ending June 30:

	1882.	1881.	Increase.	P. c.
Earnings.....	\$455,985	\$274,791	\$181,194	65.9
Expenses.....	273,591	164,874	108,717	65.9
Net earnings.....	\$182,394	\$109,917	\$72,477	65.9
Fixed charges.....	163,000	163,000		

Balance..... \$19,394  
Deficit..... \$53,083

The net balance is applicable to interest on the income bonds. The expenses for 1882 are partly estimated. The mileage was the same in both years.

**Old Colony.**—The Massachusetts Railroad Commissioners have recently made their yearly inspection of this road.

During the past year the company has put down about 75 miles of steel rails and has built several new iron bridges. Improved signals have been put up at the South Framingham crossing of the Boston & Albany.

The company has just completed a new branch from Taunton, Mass., to the main line in Raynham, 4 miles. This branch was built last year from Taunton to Whittenton Mills, about 1½ miles; the extension to Raynham was begun in April last. It makes a short cut to Taunton for trains from Boston over the main line, avoiding the press of traffic at Weir Junction. One track is completed, and a second track is now being laid.

**Ontario Southern.**—The New York Supreme Court has granted a decree of foreclosure of mortgage against this company, and an order of sale to satisfy the decree. The amount of the bonds outstanding is \$1,000,000, and of interest found due, \$429,093. The decree applies to all the property covered by the mortgage, that is to the completed road from Sodus Point, N. Y., to Stanley, 34 miles, but does not cover certain right of way and unfinished road acquired by consolidation with the Geneva, Hornellsville & Pine Creek Company some years ago.

**Oregon & California.**—Work is being pushed on the extension from Roseburg, Or., southward, and track is laid for 18 miles from Roseburg. The grading is done to Myrtle Creek, 33 miles from Roseburg. Beyond that point there are several tunnels to be finished, which will take some time.

**Oregonian.**—This road has been extended from Brownsville, Or., southward 20 miles to Coburg, on the McKensie River, through a fine agricultural country. A station has been built at Coburg, with sidings at several points on the line, and regular trains have begun to run.

**Pennsylvania.**—This company's statement shows for the month of June, as compared with June of last year, on all lines east of Pittsburgh and Erie:

An increase in gross earnings of.....	\$286,319
An increase in expenses of.....	240,529
Net increase.....	\$45,790

For the half-year ending June 30 the same lines show, as compared with the corresponding period in 1881:

An increase in gross earnings of.....	\$1,097,011
An increase in expenses of.....	1,904,041
Net decrease.....	\$807,030

For the six months of this year all lines west of Pittsburgh show a deficiency in meeting all liabilities of \$120,657, being a falling off of \$1,645,521, as compared with corresponding period last year.

**Pennsylvania, Slatton & New England.**—Contracts have been let for the bridge over the Delaware at Portland, Pa., and a considerable force is at work there. The grading from Pen Argyl, Pa., to the Delaware is nearly done, and a large force was to be put at work this week between Pen Argyl and Slatton on the Lehigh. Several miles of road are graded in New Jersey and tracklaying is in progress near Deckertown.

**Pensacola & Atlantic.**—Track is laid from Pensacola, Fla., northwest to the Escambia Bridge, nine miles, and from Milton west to the opposite side of the river. Tracklaying is in progress at several other points.

The names of the stations on the road, as now located, with the distances from Pensacola, are as follows: Magnolia Bluff, 4 miles; Bohemia, 6; Gull Point, 7; Bellevue, 8; Escambia River, 9; Duval, 13; Arcadia, 17; Milton (Blackwater River), 20; Good Range, 30; Halts, 39; Hinote, 44; Yellow River (Chaffins), 46; Crestview, 50; Shoal River, 51; Deerland, 57; Mossy Head, 66; Lake de Funiak, 80; Argyle, 84; Ponce de Leon, 91; Westville, 97; Choctawhatchee River, 99; Crescent, 100; Bonifay, 108; New Orange, 118; Cottondale, 135; Marianna, 135; Chipola River, 136; Braxton, 139; Cypress, 145; Gloster, 155; Lake Side, 157; Apalachicola River, 159; Chattahoochee, 160 miles.

**Philadelphia & Reading.**—The Receivers' statement for June and the seven months of the fiscal year from Dec. 1 to June 30 is as follows:

	June.	Seven months.
	Gross.	Net.
Railroad traffic.....	\$1,617,272	\$752,924
Canal traffic.....	47,002	6,159
Steam colliers.....	43,511	17,220
Richmond barges.....	6,945	2,906
Total R. R. Co.....	\$1,714,730	\$773,397
Coal & Iron Co.....	1,303,254	70,778
Total.....	\$3,017,984	\$844,175

\*Loss.  
The expenses do not include anything for rentals or interest, the net earnings being the sums from which those charges are to be paid.

A comparison of the net earnings is as follows:

	June.	1881.	Seven months.	1882.
Railroad Co.....	\$773,397	\$768,468	\$4,685,549	\$4,322,513
Coal & Iron Co.....	70,778	70,832	326,066	366,019
Total.....	\$844,175	\$839,300	\$5,011,615	\$4,688,532

For June the railroad company shows an increase of \$4,

929, or 0.6 per cent.; the Coal & Iron Company a decrease of only \$54, and both companies an increase of \$4,875, or 0.6 per cent. For the seven months the Railroad Company has an increase of \$363,036, or 8.5 per cent.; the Coal & Iron Company a decrease of \$39,953, or 10.9 per cent., and both companies an increase of \$323,083, or 6.9 per cent.

**Pittsburgh, Bradford & Buffalo.**—This road is now completed and opened for traffic to Frost's Mills, Pa., 4 miles beyond the late terminus at Marienville, and 55 miles from Foxburg.

**Pittsburgh, Chartiers & Youghiogheny.**—This road is now well advanced, and the company expects to have it in operation in September. It is to run from Chartiers, Pa., on the Pittsburgh & Lake Erie road, five miles from Pittsburgh, to the mines of the Chartiers Block Coal Company, on Painter's Run, a distance of about 13 miles. A line is now being surveyed from the present terminus eastward to Latrobe, passing, it is said, over the finest coal vein in Western Pennsylvania.

**Pittsburgh, Cincinnati & St. Louis.**—A dispatch from Columbus, O., July 26, says: "Robert Garrett & Sons, of Baltimore, Md., to-day filed in the United States Court a bill in chancery against the Steubenville & Indiana Railroad Company and others, asking that the liens on the road be marshaled and sold. The plaintiffs claim the first lien, which, including interest, amounts to over \$230,000, which is the balance due them on a former decree. The road is now part of the Pittsburgh, Cincinnati & St. Louis Railroad."

**Placerville & Sacramento Valley.**—The court has ordered the Receiver to turn over this road to Louis McLane, Trustee; also that the sum of \$20,156 due the Receiver be adjudged a lien upon the road, and that the company be required to pay the same, and in default thereof, the road be sold to pay said lien and the \$26,000 bonds outstanding under the mortgage of 1864. The road extends from Sacramento, Cal., to Shingle Springs, 48 miles, and is not at present operated.

**Rochester & Pittsburgh.**—A circular issued concerning this road says that when all the extensions are completed the obligations of the road will be as follows: \$1,300,000 Rochester & Pittsburgh 6 per cent. first-mortgage bonds of the Rochester & Salamanca Division; \$3,300,000 Rochester & Pittsburgh, Buffalo & Pittsburgh Division, 6 per cent. first-mortgage bonds. The issue of these bonds is limited to \$20,000 per mile of completed road. The present extensions of the road will allow of only \$2,500,000 of these bonds being issued; \$500,000 of 6 per cent. first-mortgage bonds of the Brockwayville & Punxutawney Railroad Company guaranteed by the Rochester & Pittsburgh Railroad Company; \$20,000 of 7 per cent. first-mortgage bonds of the Perry Railroad Company, guaranteed by the Rochester & Pittsburgh Railroad Company; \$700,000 of 7 per cent. car trust bonds, maturing at various dates within the next thirteen years. The total fixed charges of the company, when the present extensions are completed and the equipment all delivered, will be about \$300,000 per annum, or at the rate of only \$1,000 per mile of road operated. There are outstanding on the Rochester & Salamanca Division of the company \$1,870,000 income bonds. The interest on these bonds is non-cumulative and is paid only when earned. The company intended also to issue \$3,200,000 non-cumulative income bonds on the Buffalo & Pittsburgh Division, but has decided to issue \$5,000,000 of additional capital stock and take up and cancel the income bonds on both divisions. This would make the bonded debt less than \$17,000 per mile of road. The company has outstanding \$180,000 of 7 per cent. car trust bonds on the Rochester & Salamanca Division, and under that mortgage has the right to issue \$20,000 more of the same bonds. The company paid 20 per cent. of the cost of the rolling stock covered by these bonds in money. The company has made an additional car trust mortgage to secure the issue of \$500,000 of certificates upon rolling stock, for which it will pay \$1,000,000, or 50 per cent. of the cost, at the outset. The company also owns \$350,000 of rolling stock not covered by car trust certificates. After the extensions are completed the first mortgage debt on the entire road will be less than \$17,000 per mile and the income bonds less than \$7,000 per mile. The company is now constructing an extension from Salamanca to Punxutawney, Pa., a distance of 124 miles. It will connect at DuBois, 98 miles from Salamanca, with the Allegheny Valley road, thereby securing a direct line to Pittsburgh. It will also build extensions from Ashford to Buffalo, 45 miles, and from Rochester to Charlotte, on Lake Ontario.

The track is now laid to Bradford, Pa., two miles beyond the late terminus at Tarport and 20 miles from Salamanca. The ballasting is being pushed, and regular trains will run to Bradford very soon.

**St. Louis, Iron Mountain & Southern.**—The Cowley Ridge Branch of this road is now completed to Forrest City, Ark., the crossing of the Memphis & Little Rock road, 97 miles southward from the junction with the main line at Knobel. Regular trains will run through to Forrest City about Aug. 15. This branch runs through a section of Arkansas noted for its fertility and already pretty well settled.

The New York World says: "This company is busily engaged in throwing out small feeders along the line into the rich sections which are without proper railroad facilities. In Missouri the charter of the Doniphan Branch to run from Nealeysville, in Butler County, on the main line, to Doniphan, a distance of 19 miles, has just been filed. The charter of the Iron Mountain Company in Arkansas gives the right to build branch roads and extensions and the following are building: From Newport, in Jackson County, to Batesville in Independence County, 26 miles; from Beebe Station, White County, to Conway, in Faulkner County, 30 miles, and from Hope, Hempstead County, southeast to Magnolia, in Columbus County, 35 miles, and northwest to Mineral Springs, in Howard County, 27 miles. Of the latter branch ten miles have been in operation some time, under the charter of the Louisiana & Arkansas Railroad Company."

**St. Louis & San Francisco.**—This company has published the following statements for the half-year ending June 30, the expenses this year being estimated:

	1882.	1881.
Mileage.....	661	507
Gross earnings.....	\$1,495,989	\$1,463,913
Estimated expenses.....	747,995	636,233

Net earnings.....	\$747,994	\$827,680
Fixed charges.....	537,835	415,051

Applicable for dividends..... \$210,159

Per cent. on preferred stock..... 4.6

"The earnings for the first half of 1882 were unfavorably affected by short crops, while net earnings were decreased by large expenditures for betterments. The increase in fixed charges resulted from the establishment of new sinking funds. The earnings have begun to improve on the handling of new crops. The road is moving from 50 to 100 car-loads of wheat per day. The Arkansas Division will be opened to Fort Smith in about 60 days, securing a considerable increase in local and through business. The extension of the main line from Pacific, Mo., to St. Louis will soon be



completed, enabling the company to do business over its own line to St. Louis, and saving an annual rental exceeding \$250,000."

**St. Paul, Minneapolis & Manitoba.**—On this company's line up to the western or Dakota side of the Red River, grading is now done for some distance, and track is reported laid to Dimock, 20 miles north of the late terminus at Grafton and 60 miles from Grand Forks. It is thought that track will not be laid much further this season.

**Saratoga, Mt. McGregor & Lake George.**—Regular trains now run over this road, whose completion was noted last week. The two engines now on hand are intended for the mountain grade only, where sharp curves make hard pulling, and require moderate speed. The engine for use between Saratoga and the heavy grades did not arrive in time for the opening of the road as was intended. This one will draw to the foot of Mt. McGregor a train that will require the power of the two mountain engines to take it to the top of the mountain. On the mountain grades, 24 degree curves (of 260 ft. radius) are frequent. A steady grade of 4 ft. rise to the 100 ft. (211 ft. per mile) is maintained, except at the beginning of the mountain grade where it was necessary to adopt a grade of 232 ft. to the mile for distance of three quarters of a mile. The work on the mountain was difficult, slow and expensive. Several very large trestles were needed, some of which are 35 to 40 ft. high, up to 330 ft. long and others on sharp curves. In the first 2½ miles of line from the summit only one-half (as the crow flies) of distance is made from the starting point, the two miles of extra distance being developed to make the rise needed to reach the top of the mountain. Notwithstanding the difficult and dangerous character of much of it, and the hurry in doing it, that time has been taken to do the work safely. Not a fatal accident, nor even a serious one, has occurred in its prosecution.

**Shenandoah Valley.**—The people along the line are trying to induce this company to build a branch from their road by Cross Keys and Harrisburg to Bridgewater, Va., about 20 miles.

**Toledo, Cincinnati & St. Louis.**—The contract for grading the line from East St. Louis through the American bottom has been let to Beason & Hammond, of Kansas. The company has bought land for depots in East St. Louis and right of way across the bottom from the Wiggins Ferry Company.

The bridge over the Wabash River is nearly completed. As soon as it is finished the contractor will turn over about 100 miles of road to the company.

The Boston Transcript says: "It will be remembered that when, a few months ago, the Toledo, Cincinnati & St. Louis Railroad Company was in need of funds, a syndicate of leading Boston capitalists took all the miscellaneous assets of the company, and furnished therefore the needed \$1,500,000. The securities purchased involved the control of the company, and all the assets were placed with the American Loan & Trust Company, the stock to be held in trust until after the next election, and the other assets to be divided at the discretion of the subscribers' committee. \* \* As a list of these assets has not before been made public, the following may be of interest:

First mortgage bonds.....	\$435,000 @ 70.....	\$305,300
Equipment 7s.....	301,000 @ par.....	301,000
Incomes.....	1,737,000 @ 20.....	347,400
Stock.....	4,315,000 @ 8½.....	755,125
Miscellaneous assets.....	921,671.....	894,671
Total.....		\$7,709,771.....

The first column of figures records the amount of each security in the pool, in its nominal or par value, and the second the present market value. The subscriptions are known on the Boston market as Toledo & Delphos Trust subscriptions.

**Trinity & Sabine.**—Track on this road is now laid from the International & Great Northern at Trinity, Tex., eastward to the crossing of the Houston, East & West Texas near Moscow, a distance of 38 miles. It runs nearly all the way through the timber belt.

**Union Pacific.**—On the Gunnison Branch of the Denver & South Park Division track is now laid to Pitkin, Col., 7 miles beyond the late terminus at Woodstock and 42 miles from the main line at Buena Vista. It is expected that the road will reach Gunnison next month. It is to be extended to the coal beds, some 20 miles beyond Gunnison, this year.

**United States Rolling Stock Co.**—It is stated that this company has decided to move its Chicago shops to Calumet. The new shops to be built there will have a capacity of 20 box cars a day. The Urbana shops will be retained.

**Virginia Midland.**—This company has made a contract with the Chesapeake & Ohio road to carry stock from Kentucky to Baltimore, and a regular stock express train has been put on. A contract has also recently been made with the Chesapeake & Ohio for a large amount of grain to be carried to Baltimore.

**Wasatch & Jordan Valley.**—Notice is given that, in an action in the District Court for the Third Judicial District of Utah Territory, all holders of bonds or coupons, and all persons having or making any claim on or against the proceeds of the sale of the property conveyed by trust deed to secure said bonds and coupons, are required to present their claims and the proofs thereof to E. T. Sprague, Referee, on or before Sept. 8, 1882, in Salt Lake City, Utah.

## ANNUAL REPORTS.

The following is an index to the annual reports of railroad companies which have been reviewed in previous numbers of the present volume of the Railroad Gazette:

Page.	Page.
Alabama Great Southern.....	190
Alabama Minor Railroads.....	41
Allegheny Valley.....	264
Atchison, Topeka & S. F.....	233
Baltimore & Potomac.....	369
Bangor & Piscataquis.....	191
Boston, Concord & Montreal.....	345
Boston & Lowell.....	217
Bur. Cedar Rapids & No.....	245
Camden & Atlantic.....	4-3
Canada Southern.....	268
Canadian Government R.R.....	135
Cape Fear & Yadkin Valley.....	324
Central Iowa.....	142, 340
Central of New Jersey.....	254
Central Pacific.....	217
Charlotte, Col. & Augusta.....	23
Chesapeake & Ohio.....	157, 159
Chesapeake & Ohio Canal.....	429
Cheshire.....	384
Chicago & Alton.....	141
Chicago, Bur. & Quincy.....	217, 223
Chicago, Mil. & St. Paul.....	173, 286, 288
Chicago, Rk. P. & Pacific.....	310, 429
Chicago, St. P., Minn. & Om.....	190, 279
Cin., Hamilton & Dayton.....	370
Cin., Ind., St. L. & Chicago.....	286
Cin., New Orleans & Tex. Pac.....	71
Cleve., Col. & Indianapo.....	245
Cleve., Tuscarawas Ry. & Wb.....	190
Columbia & Greenville.....	7
Columbus, Rocking Vy. & Tol.....	222
Louisville, Cin. & Lexington.....	54
Louisville & Nashville.....	142
Manchester & Lawrence.....	340
Massachusetts Minor R. Rs.....	218
Mexican Central.....	217
Michigan Central.....	287, 293
Mil. Lake Shore & Western.....	344
Minnesota R. R. Commissioner.....	41
Mississippi & Tennessee.....	190
Missouri Pacific.....	190
Montpelier & Wells River.....	429
Natchez, Jackson & Col.....	101
New Haven & Northampton.....	190
New London Northern.....	345
N. Y., Lake Erie & Western.....	93
N. Y., N. Haven & Hartford.....	6
N. Y., Ontario & Western.....	93
N. Y., Pennsylvania & Ohio.....	190
N. Y., Susquehanna & West.....	370
Norfolk & Western.....	55
Northeastern (S. C.).....	55
Oregon Ry. & Navigation Co.....	404
Pacific Mail Steamship Co.....	370
Panama.....	217
Pennsylvania & N. Y.....	190
Pennsylvania R.R.....	157
Pensacola & Atlantic.....	246

Pensacola & Perdido.....	324
Perkiomen.....	71
Petersburg.....	194
Philadelphia & Reading.....	7, 20
Philadelphia, W. & Balt.....	22
Pittsburgh & Castle Shannon.....	142
Pittsburgh, Cincinnati & St. L.....	262
Pittsburgh & Lake Erie.....	23
Portland & Ogdensburg.....	96
Portland & Rochester.....	126
Providence & Worcester.....	246
Queen Anne's & Kent.....	384
Richmond, Fred. & Potomac.....	316
Rochester & Pittsburgh.....	6
Ruby Hill.....	324
St. Louis & San Francisco.....	41, 175
St. Paul & Duluth.....	217
Sandy River.....	190
Savannah, Florida & West.....	217
South Carolina.....	189
South Carolina R.R. & Port.....	175
Southern Pacific.....	450
Sussex.....	380
Troy & Greenfield.....	70
Union Pacific.....	175
United New Jersey.....	449
U. S. Rolling Stock Co.....	195
Utica & Black River.....	70
Vermont Valley & Potomac.....	403
Vicksburg & Meridian.....	450
Virginia Midland.....	142
Virginia & Truckee.....	160
Wabash, St. L. & Pacific.....	194, 245
Western Maryland.....	38
Western R. R. Association.....	38
Wilmington & Northern.....	436
Worcester & Nashua.....	55
Wisconsin Central.....	370

## Detroit, Lansing & Northern.

This company operates a line from Detroit, Mich., to Howard City, 160.60 miles, with branches from Kiddleville to Belding, 1.67 miles, and from Stanton Junction to Big Rapids, 63.30 miles, making 225.57 miles in all. Of this the company owns 221.57 miles, and leases the use of 3 miles, from Detroit to Grand Trunk Junction, and of 1 mile, from Lansing to North Lansing, from the Michigan Central. The report is for the year 1881.

The general account, condensed, is as follows:

Stock, common.....	\$1,825,600.00
" preferred.....	2,503,300.00
Bonded debt.....	3,213,000.00
Accrued interest, accounts and balances.....	234,081.38
Saginaw Valley & St. Louis road.....	38,216.18
Sinking fund.....	58,142.84
Income account, balance.....	139,127.86
Total.....	\$8,011,468.26
Road and equipment.....	\$7,549,695.04
Sinking fund.....	128,142.84
Charles Merriam, trustee.....	3,160.00
Accounts and balances.....	86,016.51
Materials.....	54,421.05
Cash.....	190,032.82
Total.....	\$8,011,468.26

The funded debt consists of \$2,443,000 Detroit, Lansing & Northern 7 per cent. bonds, and \$770,000 Ionia & Lansing 8 per cent. bonds, the last-named bonds being a first lien on 50 miles of the main line.

During the year \$50,000 depot ground bonds, due Nov. 1, 1881, were paid off. This amount is carried as a floating debt, to be provided for from the sale of general mortgage bonds. There were sold \$178,000 general mortgage bonds at 17½ to 17¾ premium, the principal being applied to the payment of \$81,000 Ionia & Lansing second-mortgage bonds, which matured Nov. 1, 1880, and to completing payment for the Stanton Branch, and the premium to the purchase of new equipment.

The traffic for the year was as follows:

Train miles	1881.	1880.	Inc. or Dec.	P. c.
Passenger.....	385,571	310,710	I.	74.861 24.1
Freight.....	602,036	496,224	I.	135.812 29.1
Switching and service.....	298,029	231,954	I.	66.075 28.5
Total.....	1,285,636	1,038,888	I.	276,748 27.4
Car miles.....	1,226,890	1,004,470	I.	222,420 22.2
Freight.....	9,158,616	7,670,311	I.	1,479,305 19.3
Passengers carried.....	555,725	499,785	I.	55,940 11.2
Passenger miles.....	13,741,232	12,204,091	I.	1,537,141 12.6
Tons freight carried.....	567,371	508,450	I.	58,921 11.6
Ton miles.....	56,069,960	46,382,472	I.	9,677,488 20.8
Av. train load:				
Passengers, No.....	36	39	D.	3 7.7
Freight, tons.....	93	100	D.	7 7.6
Av. receipt:				
Per pass. mile.....	2.60 cts.	2.58 cts.	I.	0.110 ct. 4.2
Per ton mile.....	1.711 "	1.838 "	D.	0.127 " 6.9

The cost of locomotive service was 17.8 cents per mile. The average earnings per revenue train miles were \$1.39; expenses, \$0.95; net earnings, \$0.44.

Of the freight car mileage 37.8 per cent. was of empty cars. Foreign freight cars ran 4,840,063 miles, being 52.8 per cent. of the total freight car mileage.

The earnings for the year were as follows:

	1881.	1880.	Inc. or Dec.	P. c.
Freight.....	\$959,814	\$852,932	I.	\$106,882 12.5
Passengers.....	370,475	314,675	I.	55,800 17.4
Other.....	47,410	35,545	I.	11,865 33.4
Total.....	\$1,377,699	\$1,203,152	I.	\$174,547 14.5
Expenses.....	934,430	739,005	I.	195,425 26.4
Net earnings.....	\$443,269	\$464,157	D.	\$20,878 4.5
Gross earn. per mile.....	6.108	5.334	I.	.774 12.5
Net.....	1.965	2.038	D.	.073 3.7
Per cent. in exp.....	67.82	61.42	I.	6.40

The increase in expenses, which exceeded that in earnings was due to increase cost of train movement, large renewals and a large increase in freight traffic carried necessarily at lower rates. Of the total tonnage 73.7 per cent. was of lumber and forest products, so that the earnings depend largely upon lumber rates.

The income account for the year was as follows:

Net earnings, as above.....	\$443,269.39
Interest received.....	3,643.00
Total.....	\$446,912.39
Interest on bonds.....	\$235,526.66
Dividends on preferred stock, 7 per cent.....	175,231.00
Surplus for the year.....	\$36,154.73
Balance, Dec. 31, 1880.....	102,973.13
Balance, Dec. 31, 1881.....	\$139,127.86

The earnings for the year were thus sufficient to pay interest and 7 per cent. on the preferred stock, and leave a balance equivalent to 2 per cent. on the common stock. During the year the road-bed was improved by ditching, widening cuts and embankments, raising at several points, reducing grades at others, and similar work. Three trestles were filled up, and two bridges dispensed with by changing the course of a stream. There were 103 miles of fence rebuilt. The Grand River wooden bridge was replaced by four iron spans. Two wooden bridges were replaced by stone arches. The work of replacing wooden culverts with iron pipe was continued.

Ten miles of iron track were replaced by steel, making 137 miles of steel track now in use. Eight miles of the Stanton Branch were relaid with rolled iron rails. There

were 60,000 new ties put in the track, and about 20 miles of road received new ballast. Four new water stations were built.

Besides the 30 engines owned by the company, it was necessary to lease seven engines at different times during the year.

## Ohio Southern.

This company owns a line from Springfield, O., to Jackson, 109 miles, with branches at Jackson, 1 mile, and from Jackson to Wellston, 10 miles, making 120 miles in all. The report covers a period of nine months, from April 1 to Dec. 31, 1881.

The equipment consists of 19 engines, 3 passenger and 2 baggage cars; 878 freight cars and 3 service. The road was formerly the Springfield, Jackson & Pomeroy, and passed to the present company through foreclosure. It is controlled in the interest of the Indiana, Bloomington & Western Company.

The earnings for the nine months were as follows:

Earnings (\$1.821 per mile).....	\$218,401
Expenses (64.9 per cent.).....	141,833
Net earnings (\$639 per mile).....	\$76,568
Interest on first-mortgage bonds.....	67,200
Surplus.....	\$9,458

The interest above is computed for nine months. Interest upon the bonds did not begin to run until June 1, so that the actual amount called for last year was \$52,600.

The report of President B. S. Henning says: "When it is remembered that for several months after the property was turned over to us it was hardly in condition to operate at all, and that during nearly the whole period of nine months we suffered under extremely unfavorable conditions for handling our business, there remains from this showing no substantial doubt of the ability of the road to earn its fixed charges in the future; and your board believes there is a reasonable prospect that, with the improvements that are being made and the new connections that are to be formed, the company will in time be able to earn interest upon its income bonds and a dividend upon its stocks. \* \* \*

"At the time of the purchase of the Springfield Southern Railroad and the organization of this company under its present title, the financial scheme adopted embraced the issue of \$1,920,000 first mortgage bonds, which provided for the purchase of the road and left \$920,000 to be used in the improvement of the property, including the completion of the change from narrow (to standard) gauge tracks, the laying of new steel rails on a considerable portion of the line, the strengthening of the bridges so as to carry the heavy engines, the extending of new switches to the different mines and furnaces, and the purchase of new equipment. Of this sum up to Jan. 1 there was expended \$526,193, leaving \$393,807 to be used in the further improvement of the property."

## Galveston, Harrisburg & San Antonio.

During the year 1881 this company worked a line from Houston, Tex., to San Antonio, 217 miles, with branches from Harrisburg to Peirce Junction, 8 miles, and from Columbus to La Grange, 31 miles, making 256 miles in all.

The equipment consists of 37 engines; 19 passenger, 7 sleeping, and 7 baggage and mail cars; 234 box, 121 stock, and 487 flat cars; 93 service cars.

An extension from San Antonio to El Paso, 600 miles, with a branch to Eagle Pass, 45 miles, are in progress, but are not included in the report.

The general account is as follows:

Stock.....	\$11,720,686.00
Funded debt.....	6,123,082.64
Stock dividend unpaid.....	45,290.00
Bills, accounts and balances.....	699,292.28
Profits and loss.....	647,028.50
Total.....	\$19,235,409.42
Road and property.....	\$13,324,977.84
Paid on extension.....	4,800,000.00
Stocks, bonds, and sundry assets.....	671,566.53
Bills, accounts and balances.....	228,693.93
Materials.....	168,680.96
Cash.....	41,690.16
Total.....	\$19,235,409.42

The funded debt consists of \$4,800,000 first-mortgage bonds; \$1,000,000 second-mortgage bonds, and \$323,082.64 due the Texas school fund.

The stock was increased \$5,270,686 during the year. The Texas school fund loan was diminished by \$21,592.39.

There are authorized issues on the extension of \$20,000 per mile in first-mortgage bonds, and \$10,000 per mile in second-mortgage bonds.

The traffic for the year was as follows:

	1881.	1880.	Inc. or Dec.	P. c.
Train miles.....	549,373	448,593	I.	97,780 21.8
Passengers carried.....	95,005	78,547	I.	16,458 21.0
Passenger-miles.....	6,313,906	6,099,888	I.	214,018 3.5
Tons freight carried.....	205,240	177,198	I.	28,042 15.8
Ton-miles.....	31,473,421	24,124,949	I.	7,348,472 30.5
Av. receipt:				
Per passenger-mile.....	3.222 cts.	3.510 cts.	D.	0.288 cts. 8.2
Per ton-mile.....	3.123 "	4.690 "	D.	1.567 " 33.4

The mileage worked was 256 miles in 1881 and 225 miles in 1880.

The earnings for the year were as follows:

	1881.	1880.	Inc. or Dec.	P. c.
Freight.....	\$982,057	\$1,131,804	D.	\$149,747 13.2
Passengers.....	209,087	214,480	D.	4,502 2.1
Mail, etc.....	60,873	46,537	I.	14,336 30.7
Total.....	\$1,252,017	\$1,392,821	D.	\$140,804 10.8
Expenses.....	755,045	593,725	I.	161,320 27.2
Net earnings.....	\$503,872	\$799,165	D.	\$295,293 36.9
Gross earn. per mile.....	4.918	6.191	D.	1.273 25.6
Net.....	1.968	3.552	D.	1.584 44.6
Per cent. of expenses.....	60.0	43.7	I.	17.3

The earnings of the completed portion of the extension are not returned by the contractors, who operate it for the present.

The income account was as follows:

Net earnings, as above.....	\$503,871.62
Other receipts.....	38,070.44
Total.....	\$541,942.06
Interest.....	\$385,513.87
Miscellaneous.....	33,624.92
Surplus for the year.....	122,803.57
Balance from previous year.....	1,040,724.93
Total surplus.....	\$1,163,028.50

Against this surplus there was paid a stock dividend of 8 per cent., amounting to \$516,000. Expenditures for improvements on the old line during the year were \$33,431.60 for real estate, \$322,959.39 for new construction, and \$160,232.66, a total of \$516,623.65. This does not include any work on the extension.